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JOURNAL

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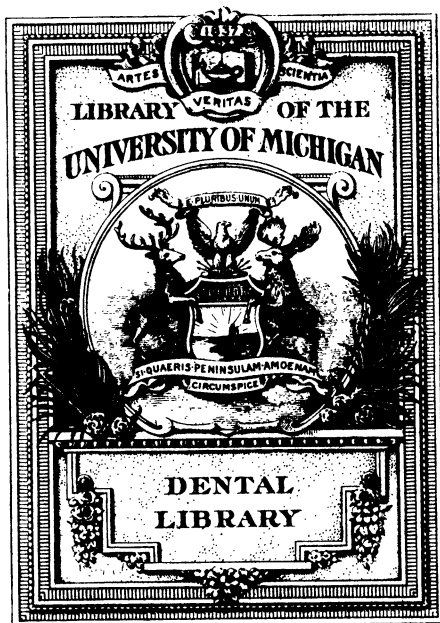
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YEAR 1911

The AMERICAN DENTAL JOURNAL

Edited By

BERNARD J. CIGRAND, M. S., D. D. S.

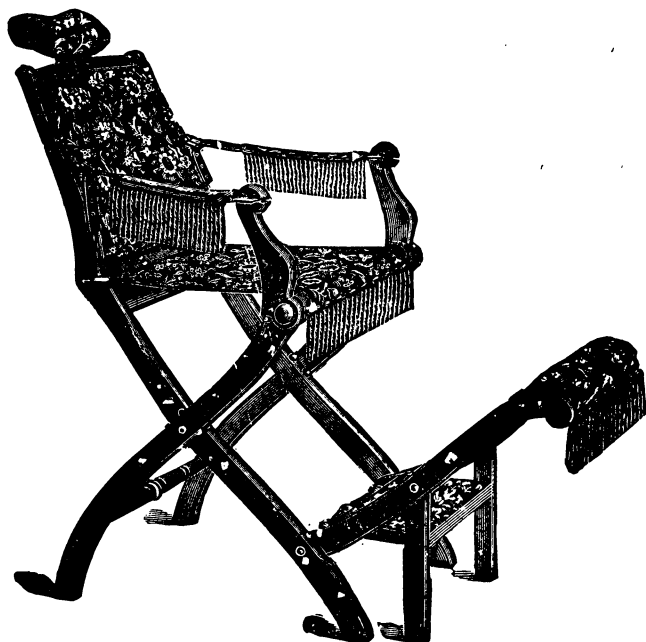
DECLARATION:

*Devoted to advancing the art and science of dentistry;
Arousing a deeper conception of our duty to the public;
Instilling a broader and more liberal professional spirit;
Aiding in elevating the plane of dental organizations;
Supporting state boards in executing dental laws;
Lending assistance to worthy and ethical practitioners;
Instituting library and college extension courses;
Pointing the way to entertainment, recreation and rest;
Instructing in the science of proper practice building;
Teaching the public the art of dental hygiene.*

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The AMERICAN DENTAL JOURNAL

DR. BERNARD J. CIGRAND, Editor

Published on the fourth of every month by The
Ross Dental Manufacturing Company.

Editorials and Comments

"The editor assumed charge of this journal with the signed understanding that he shall have absolute and unlimited control and supervision of the editorial and literary elements; this unusual grant makes it possible to render the profession an independent periodical; the title page clearly indicates the scope under the new policy of this old established journal."—*Publishers.*

RECIPROCITY AND EXCHANGE DO NOT MEAN THE SAME.

That there is evidence of a lack of comprehension of the true definition of the two words, reciprocity and exchange, must be clear to anyone who has followed the discussions, correspondence and literature relating to the problem of broader valuation to a dental license, as recently treated in letters and dental society gatherings. It is very comforting to observe the deep interest that is being taken in this dental progression, but that the general practitioners as well as the members of the state dental boards have a wrong conception of the two words, reciprocity and exchange, is apparent in that they employ them as synonyms—and this is an error and will lead to uncalculable difficulties, as will here be shown.

There is a general awakening all over the land on this problem of according proper recognition to the license of a reputable and deserving dentist and never in the history of our profession, save in 1844, has there ever been such a wave of advancement in our professional behavior. In nearly every state in the union there is now or has recently been, bills before the state legislatures seeking to be

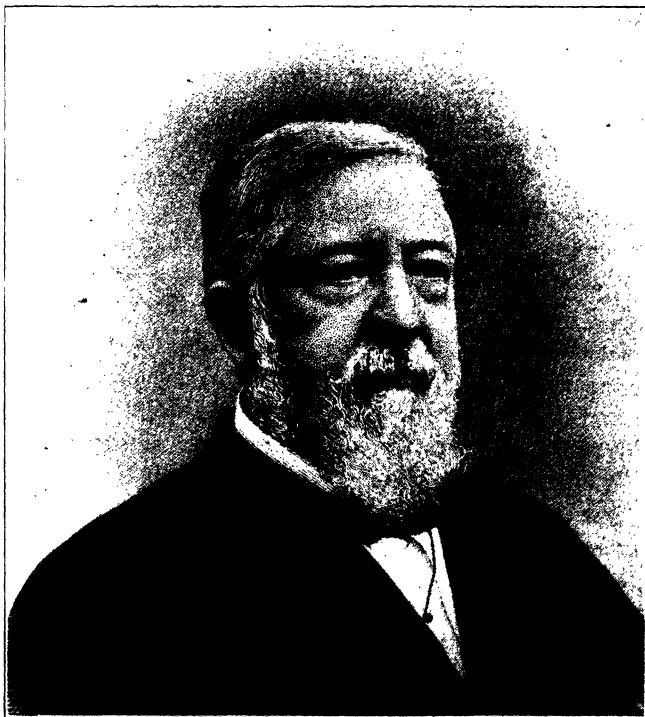
made into laws, intended for the betterment of our professional relationship.

Possibly there has been too much effort put forth and likely in a hasty and inconsiderate way. These bills have been of such a diverse form they have been so varied and of so different a character, that one would wonder what the ultimate could possibly be. Yet in all this seeming lack of uniformity, there was earnest, honest progress, and a few years will bring to the surface wherein there has been unification and harmony. It is yet too early to pass judgment and all patient practitioners can afford to wait and see the finale.

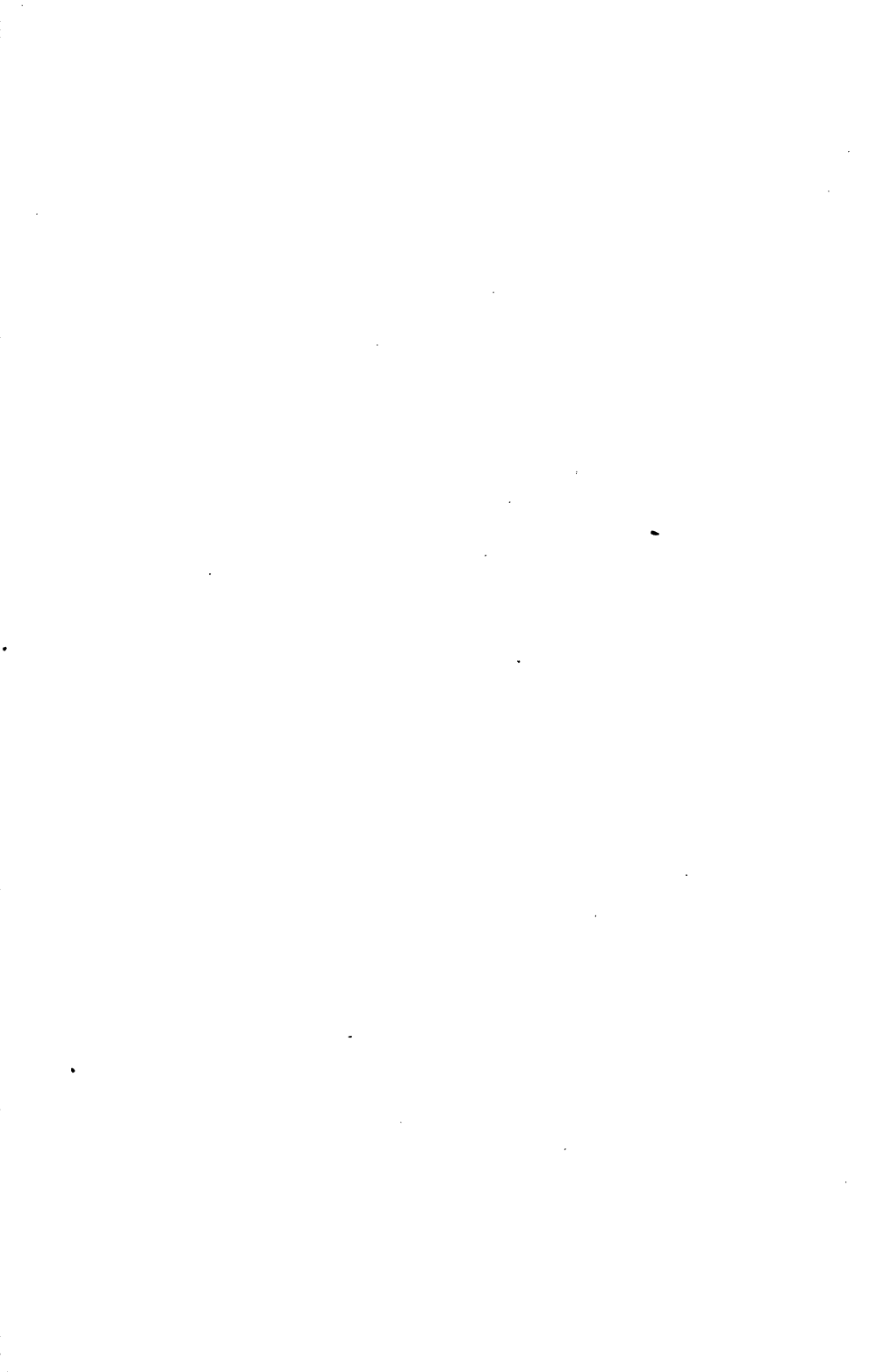
THE AMERICAN DENTAL JOURNAL placed utmost confidence in the wisdom of the ethical profession and the only hope or ambition this journal has had in agitating this problem, is not to make it unpleasant for the state boards, for these bodies deserve great credit for their services,—but the uppermost purpose of this journal has been to accord fair, proper and equitable treatment for such of our honored and deserving members, who by fate or otherwise seek new and more promising locations. It was for this cause alone that THE AMERICAN DENTAL JOURNAL one year ago, opened the proposition:—what protection under present existing laws has a clinician, when performing dental service in a state in which he is not a legally registered dentist? And the additional question: “Why can not state boards arrange with the profession at large to make dental license exchange possible?” To these two problems this journal for months has religiously devoted itself, and with the generous aid of its readers has created a wide and effective campaign, reaching to the farthest extremities of the republic. The space devoted to these problems under the covers of this journal—more than 275 pages were devoted—if bound together would form a good size book.

That the readers were pleased and that great good came from this “special feature,” is well attested from the eagerness with which the dentists who were contemplating or devising new laws, sought the back numbers of THE AMERICAN DENTAL JOURNAL.

Nor is the campaign over with—in fact it has only just begun, notwithstanding that great and most satisfactory headway was made, this journal will continue to wage war relentlessly on the phase of the law or the action of any organization which seeks to limit or to trottle the dignified position of our professional standing.



JAMES G. BLAINE
"FATHER OF RECIPROCITY"



But let us get back to the words reciprocity and exchange, two words which in bills, laws and correspondence are used in a most reckless manner, being interchanged as though they meant the same thing.

James G. Blaine, who can rightfully be called the "father of reciprocity," was unalterably opposed to exchange or trade. Reciprocity in a political sense did not carry with it the idea of free trade or exchange.

Reciprocity only refers to a certain item of the commercial treaty, while free trade applied to them all.

In the "Dictionary of American Politics," the following definition clearly illustrates the situation. Please observe the word certain in the defined paragraph, as it tells the restriction in the term reciprocity:

"Reciprocity is the granting by one nation of *certain* commercial privileges to another, whereby the citizens of the latter are put on an equal basis with citizens of the former in *certain* branches of commerce. The term was formerly used chiefly with reference to shipping, but is now applied also to privileges concerning imports. One nation agrees to reduce or abrogate entirely the duties on *certain* merchandise imported from another, in return for like concessions as regards itself. It is customary to provide that, should either of the parties to the treaty grant *more favorable conditions* to a third nation, such privileges should insure also to the benefit of the other party to the treaty; such an agreement is called the 'most favored nation' clause of the treaty."

Look up exchange or free trade in this dictionary and new light will come as to the difference between these words. To apply it in a dental way let us assume a case. Suppose the state of Illinois and the state of Indiana agree on dental reciprocity and the former state board agrees that all Indiana dentists of five-year registration can legally practice in Illinois after submitting to an examination at the chair and laboratory—exempting them from an examination in theory. In other words only requiring the applicant to actually perform a definite operation in the mouth and constricting a definite prosthetic appliance. Indiana reciprocates by saying we will accord the same treatment to Illinois dentists under these same conditions. This is reciprocity, while license exchange or free trade of license would mean

that there be no examination either in theory or practice, but the license would be granted upon the applicant producing such certificate or credential as would show, without doubt, his absolute ability, his thorough understanding and unquestioned standing and the presentation of this credential from the state board from whence he went, would after due and proper verification, be accepted by the state board to which he applied.

Reciprocity is subject to a thousand different modifications, as it only pertains to certain few items in the treaty, understanding or agreement, while exchange or free trade applies to them all.

Hence it becomes important for us to use these words both in correspondence and in our laws, not interchangeably—not as synonyms, but as two definite and distinct forms of thought. Reciprocity will do but let us strive for exchange.

SPECIAL CONTRIBUTIONS.

ALPHABETICAL LIST OF DENTAL LAWS, RULES AND REQUIREMENTS.

COLLECTED BY A. IRWIN.

1. Alabama, Law.
2. Alberta, Law.
3. Algeria, Requirements.
4. Argentine Republic (Rules).
5. Arizona, Law.
6. Arkansas, Law.
7. Australia, Law.
8. Austria, Requirements (Med. M. D.)
9. Belgium, Law Med. (Degree M. D.)
10. Bolivia, Requirements (Medical).
11. Brazil, Requirements.
12. British Columbia, Law.
13. British North Borneo, Requirements.
14. Bulgaria, Law (Extracts), Sanitary Laws.
15. California, Law & Law (Extracts).
16. Canada, Law.
17. Cape Colony, Extracts Law (Med.).
18. Chile, Requirements.
19. China (No Laws).
20. Colombia, Law.
21. Colorado, Law.
22. Connecticut, Law.
23. Congo Free State, Requirements.
24. Costa Rica, Requirements.
25. Cuba, Requirements (Medical Law).
26. Delaware, Law.
27. Denmark, Requirements.
28. District of Columbia, Law.
29. Dominican Republic, Requirements.
30. Ecuador, Requirements.
31. Egypt, Regulations.
32. England, Law.
33. Florida, Law.
34. Formosa, Law.
35. France, Law.
36. Georgia, Law.
37. Guatemala, Requirements.
38. Germany, Trade Regulations (D. D. S. Recognized).
39. Great Britain, Law (Medical).

40. Greece, Requirements.
41. Haiti, Requirements.
42. Hawaii, Law.
43. Honduras, No Requirements.
44. Hungary, Requirements.
45. Idaho, Law.
46. Illinois, Law.
47. India, Tax License.
48. Indiana, Law.
49. Iowa, Law.
50. Ireland, Law.
51. Italy, Law, Med. (Degree M. D.).
52. Jamaica, Law.
53. Japan, Law.
54. Java, Requirements (Netherlands).
55. Kansas, Law.
56. Kentucky, Law.
57. Kongo Free State, Requirements.
58. Korea, Requirements.
59. Liberia (No Law).
60. Louisiana, Law.
61. Madagascar, Law, French.
62. Maine, Law.
63. Manchuria (No Law).
64. Manitoba, Law.
65. Maryland, Law.
66. Massachusetts, Law.
67. Mexico (Regulations, Trade Tax).
68. Michigan, Law.
69. Minnesota, Law.
70. Mississippi, Law.
71. Missouri, Law.
72. Montana, Law.
73. Morocco, No Requirements.
74. Nebraska, Law.
75. Netherlands, Law (Medical), M. D. Degree.
76. Nevada, Law.
77. New Brunswick, Law.
78. Newfoundland, Law.
79. New Hampshire, Law.
80. New Jersey, Law.
81. New Mexico, Law.
82. New Mexico, Law.
83. New York, Law.
84. New Zealand, Law.
85. Nicaragua, Law.

86. North Carolina, Law.
87. North Dakota, Law.
88. Norway, Requirements.
89. Nova Scotia (Rules), Law.
90. Ohio, Law.
91. Oklahoma, Law.
92. Ontario, Law.
93. Orange Free State?
94. Oregon, Law.
95. Palestine (No Restrictions).
96. Panama, Law (Enforced).
97. Paraguay, Requirements.
98. Pennsylvania, Law.
99. Persia (No Restrictions Enforced).
100. Peru, Requirements.
101. Philippine Islands, Law.
102. Portugal?
103. Prince Edward Is., Law.
104. Porto Rico, Law.
105. Quebec, Requirements.
106. Rhode Is., Law.
107. Roumania (Medical), Law (M. D. Title).
108. Russia (Medical), Requirements (M. D.).
109. Saskatchewan, Requirements.
110. Scotland, Law.
111. Salvadore, No Requirements.
112. Servia (Med. Law), Extracts (M. D.), "Sanitary Laws."
113. Siam, Requirements.
114. Straits Settlements, "No Ordinance."
115. South Carolina, Law.
116. South Dakota, Law.
117. Spain, Requirements.
118. Sweden, Requirements.
119. Switzerland, Law.
120. Syria, Permit.
121. Tasmania, Law.
122. Tennessee, Law.
123. Transvaal, Law (Medical).
124. Texas, Law.
125. Tunisia, Requirements.
126. Turkey, Permit (Law Not Enforced).
127. Uruguay, Requirements.
128. Utah, Law.
129. Venezuela, Law.
130. Vermont, Law.
131. Virginia, Law.

- 132. Wales, Law.
- 133. Washington, Law.
- 136. Wisconsin, Law.
- 137. Wyoming, Law.
- 138. Yukon, Requirements.

ALPHONSO IRWIN, D. D. S., 425 Cooper St., Camden, N. J., U. S. A.

FOREIGN DENTAL LAWS.

BY ALPHONSO IRWIN, D. D. S.

We present herewith a group of countries which require a medical training in order to secure a license to practice dentistry. It behooves each dentist of the States to consider well whether he wants any regulations of the following kind, under medical supervision, governing the practice of dentistry. The dental profession will soon face a crisis in its history when the question must be decided: Shall dentistry continue to exist as an independent profession, or, must it become absorbed by the medical profession and known as well as practiced hereafter as a specialty of medicine. This is why the enforcement of foreign dental laws under medical regulations should be studied with the most watchful care by all dentists.

During 1911 we received the license requirements and laws from the Argentine Republic, France, the Balkan States, including Bulgaria, Roumania and Servia. These enactments contain the legal features deemed most desirable in each country at the present time to correspond with the advanced ideas in the profession and the needs of the public.

The reason for not quoting the laws in full should be obvious. First, they contain irrelevant matter as far as dental requirements are concerned; second, they are too lengthy; third, the busy dentist wants the gist of the law.

ARGENTINE REPUBLIC.

The most noticeable characteristics of the Argentine Republic requirements are that:

1. Physicians, pharmacists, dentists and midwives are included together, under the provisions of the same laws.

2a. United States diplomas must be legalized by the Department of State at Washington, D. C.

b. The legalization of the signatures and seal should be on the diploma itself, or attached to same by a ribbon under seal.

c. Diplomas must be vise'd by the Argentine minister or the Argentine consul for the state where the diploma is issued.

d. The diploma must be translated into the Spanish language by a public translator of the Argentine Republic.

e. The diplomas must be legalized by the Argentine minister of public instruction and the minister of foreign affairs.

f. The diploma should be presented to the matriculation board of the university faculty who give the applicant the necessary information as to all the preliminary steps for entering upon the course of studies.

g. The curriculum for the revalidation of a diploma is the same as for students of the University of Buenos Aires. The fee for revalidation is 350 c/1, or \$148.61 in U. S. currency.

A. The examinations must be progressive, i. e., the full course from the lower to the higher studies.

B. In case of failure of the applicant to pass, he can apply later for a re-examination.

C. The time for the examinations are the months of March, July and December.

BUENOS AIRES, ARGENTINA.

Subject: *Diplomas.*

OPINION OF CONSUL:

You cannot practice in this country without previously passing the full series of examinations required by the faculty from Argentine students.

Diplomas from foreign countries of doctors of medicine, pharmacists, dentists and midwives must be duly legalized by the Department of State, at Washington, D. C., and, furthermore, be vise'd by the Argentine minister, or the Argentine consul for the state where the diploma is issued. The legalization of signatures and seal should be on the diploma itself, or attached to the same by a ribbon, under seal.

The diploma must be translated into the Spanish language by a public translator of the Argentine Republic.

The diploma must be legalized by the Argentine minister of public instruction and the minister of foreign affairs, and presented to the natriculation board of the university faculty, the applicant

receiving from this board the necessary information as to all the preliminary steps for entering upon the course of studies.

The curriculum for the revalidation of a diploma is the same as for students of the university—dentists, \$350.c/1, or \$148.61 U. S. currency.

The examinations must be progressive, i. e., the full course from the lower to the higher studies.

In case of failure of the applicant to pass he can apply later for a re-examination.

The time for the examinations are the months of March, July and December.

CONSUL-GENERAL RICHARD · M. BARTLEMAN.

FRANCE.

Five Years' Course Required to Obtain Degree.

1. The most salient features of the latest French dental enactments are the raising of the standards of the requirements.

2. The American dentist who desires to locate in France will find the requirements of the new law which go into effect in November, 1911, much more difficult than formerly.

3. REQUIREMENTS OF THE NEW LAW :

"The course of study leading to the degree of dental surgeon in France now requires five years divided into periods, the "stage" (two years of probationary work in a dentist's office or a laboratory of a dental college) and three years of actual attendance at a recognized dental college. The applicant must produce for his initial enrollment evidence of having completed at least a common school course. The conditions of admitting women are somewhat more strict.

4. "At the end of the second year of the 'stage' the student must submit to an examination of validation, which comprises first, the execution of a design reproducing the scheme of the exterior form and structure of one of several teeth; second, a practical test in modeling, reproducing in wax plaster, wood or ivory several teeth of the mouth; third, making an artificial denture (the execution of a device, including metallic part stamped and soldered); fourth, questions on physics, chemistry, mechanics and metallurgy as applied to the dental art. An oral test of half an hour is also given.

5. "The second period of the course is known as the 'scolarité,' requires three years, and includes in brief the following branches:

First year, elements of anatomy, physiology and bacteriology; asepsis and antiseptics; complete anatomy of the teeth, their development and articulation with the maxillaries; also operative and mechanical dentistry. Second year, elements of medical dentistry, auscultation of the heart, odontology and hygiene of the mouth. The work of the second year is completed with practical exercises in dental clinics and laboratory work. Third year, dental clinics, dental operations and mechanical dentistry, as well as practical work in different phases of dental art."

6. EXAMINATIONS:

"A candidate for the degree of dental surgeon must successfully pass three examinations, one at the end of each school year, covering the work done during that period. The French diploma of dental surgeon is issued by the faculty of medicine of Paris, Lyon, Bordeaux and Nancy. Proper credit on the examination is given for work done in hospitals under the supervision of the faculty. Graduate dentists from foreign countries desiring to practice in France are required to pass the examinations prescribed in the decree. They may obtain a total release from the 'stage' and a partial release from the 'scolarité' course upon the recommendation of the consulting board of public instruction, which bases its decisions largely upon the candidate's credentials and scholastic attainments. Dental surgeons are obliged to register at the prefecture, and at the record office of the civil tribunal of their arrondissement within a month after their establishment in business."

6. "Infractions of the dental laws are subject to criminal prosecution. The illegal practice of dentistry is punishable by a fine of 1,000 to 2,000 francs (a franc, 19.3 U. S. cents), and 3,000 francs for the second offense, together with an imprisonment of six months to one year. Failure to register one's diploma is punishable by a fine of 25 to 100 francs. The court also deprive an offender, temporarily or permanently, of the right to practice his profession. This applies to foreigners as well."

7. FOREIGN DENTISTS:

"Foreign dental students and those desiring to practice dentistry in France are subjected to the same requirements as native students and practitioners; furthermore, unless they are versed in the language of this country they are placed at a great disadvantage in taking the

entrance examinations and pursuing the course prescribed, as all examinations are given and all questions must be answered in French.

Hence, knowledge of French seems absolutely essential to obtain a dental diploma. State diplomas authorizing the holder to practice anywhere in France or its colonies are conferred upon the successful completion of studies in any of the dental colleges of France."

8. PARTIAL RELEASES:

"While a graduate of a foreign dental college of the required standard, upon the presentation of his diploma, before the proper authorities, is not prohibited from practicing as an assistant on commission in the office of a fully authorized dentist, yet he cannot practice under his own name until he shall have procured a state diploma. The new law permits of the total release from the 'stage' the two-year period of probationary work, as well as partial release from the 'sclorite' or three-year course in a dental college, upon presentation to the superior board of public instruction of excellent credentials in the way of college degrees, doctors' diplomas, or a dental diploma, but the securing of a dispensation is a slow, tedious process, and requires the payment of numerous large fees. American dentists contemplating coming to Paris to practice should not fail to have their dental diploma visé'd by the nearest French consul and provide themselves with all credentials possible. It will aid them."

RELEASES:

In securing releases, the applicant for a partial release must produce evidence of having completed three years' work in a dental college. In no case will a diploma be granted unless the last year's work has been done in the school issuing a diploma.

ADDENDA.

"There are present in Paris a number of graduates of American dental colleges employed in dental offices on a commission or salary and at the same time pursuing courses in local schools, thus preparing themselves for the examination and for ultimate admission to practice under their own names."

DENTAL LICENSURE, UNDER MEDICAL ESPIONAGE.

The dentists of the United States and particularly those of the states of Virginia and New Jersey can obtain a fair idea of the character of continental dental licensure under medical laws from the Balkan states. Roumania and Servia require the applicant to possess the title of M. D.

BULGARIA.

"The Bulgarian government has stated in a communication that, according to Article 120 of the law on public health in Bulgaria, any person who has successfully completed the course of a dental school and who desires to acquire the right to practice the profession of dentistry in the kingdom must pass an examination, called the 'colloquium,' and that only Bulgarian subjects are admitted to the said 'colloquium.'"

ROUMANIA.

The dentist in Roumania applies for a license to practice dentistry under the Roumanian sanitary laws.

These laws attract particular attention because physicians, dentists, veterinarians, pharmacists and midwives licensure is provided for under the same laws.

EXTRACTS FROM ARTICLE 82.

"The authority of the minister of the interior, published in the official Monitor, is necessary."

"Right to practice the above professions is given to possessors of academic degrees granted by schools in Roumania. Degrees and diplomas bestowed by foreign faculties upon Roumanian subjects."

C. "Similar rights are granted to persons born in the country (not citizens) who have received their secondary education in Roumania."

D. "Persons possessing foreign diplomas must, in order to obtain the right to practice, first pass an examination."

"Only those persons who hold diplomas deemed equivalent to those provided for according to the law on instruction are admitted to take the examination giving the right to practice."

4. "The examination for the right to practice is conducted by the general board of the sanitary service, under the supervision of a jury composed as follows:"

D. "For dentists, of two members being *surgeons* of the superior sanitary council and *one dentist* named by the sanitary board."

5. "Candidates for the examination must pay the taxes pertaining thereto."

G. "Doctors of medicine, veterinary surgeons and pharmacists, three hundred lei (francs) (about \$57.90 U. S. coin)."

H. "A special regulation will determine the matter of holding such examination and the distribution of taxes."

"Article 83. Dentistry, as is the case with any other specialty of medical practice, cannot be practiced by persons other than *doctors of medicine*, having the right to practice, having obtained such right, according to the terms of this law, and having a diploma or a certificate which confers the right to practice dentistry in this country."

"Dentists without the degree of doctor of medicine but who have studied their specialty in a school of dentistry, and who have been engaged in the practice of dentistry four years prior to the time of the promulgation of this law, shall continue to have such right to practice. All those who have obtained the right to practice under previous legislation shall continue to enjoy the right to practice."

"Persons without academic degrees, and designated as 'dental machanics,' will only be allowed to work in connection with doctors and dentists who practice according to the terms of this law."

AMERICANS TAKE NOTICE!

ROUMANIA.

ART. 83. CONT. SECRET PARTNERSHIPS.

"The formation of a partnership by which such a person, 'dental mechanic,' places himself under the protection of a doctor of medicine who does not practice dentistry, for the purpose of thus practicing in an illegal manner this specialty of medicine, is considered as a violation of the law, and the offender will be prosecuted."

"A doctor who is proven to have conveyed to another by such a secret understanding a right which according to the law is absolutely *personal* shall be subjected to a fine of from two hundred to two thousand lei (francs), and the person who has profited by such a right, which the law does not recognize as belonging to him, shall be considered as practicing medicine illicitly, and shall be prosecuted according to the terms of Art. 88."

SERVIA.

"According to the terms of Art. 9 of the law regarding the original organization of the sanitary service and the maintenance of the public health it is provided:

1. "All doctors, surgeons, etc., including doctors of dentistry, desiring to obtain the right to practice their profession in Servia or to enter the service of the state or communes, are required to be Servian Nationals, to have a *diploma* as a *doctor of medicine*, or some other certificate of equal value, to submit to an assistant physician

in a hospital of the state designated by the ministry of the interior. Those that pass the examination receive the right to practice in Servia and to enter the service of the state in case of necessity."

2. "Those that serve their time in military hospitals are considered as having passed a year in a clinic after they have received their doctor's degree and are in a like manner considered as having passed their time in a state hospital. Recognized specialists who may have been admitted to the service of the state upon the proposal of the grand council for (public) health are exempted from any examination."

3. "The regulations regarding the official examination are determined by the minister of the interior acting in accord with the grand council for (public) health. Dental surgeons are not recognized in Servia if they have not also become doctors of medicine."

CLEFT OF PALATE CASES.

New and Simplified Method of Restoration.

BY B. J. CIGRAND, M. D., D. D. S.

Of late there has been a revival of interest in matters pertaining to methods calculated to restore or correct cleft of palate cases. The literature of our profession indicates a deep concern in this direction, though for the most part the papers read before dental gatherings treat the subject from the standpoint of the surgeon. Now it is my purpose to call your attention to the shortcomings of the surgical method, in so far as this method does not comply with the laws and functions of nature. But before directing any attention to the surgical method I am impelled to write in the highest terms of the successes of Drs. Garretson, Marshall and Brophy, who have in many cases accomplished pronounced triumphs in certain favorable cases. But there are cases which do not yield to the surgeon's knife—there are times when the standing rules of nature rebel against interference, and it becomes necessary to aid, rather than force, nature to take certain grounds. There is not at present a more congenial procedure than the strictly prosthetic, provided that good judgment is used in the character of the appliance.

Surgery has its triumphs in certain cases, but when the oral surgeon advocates these corrections by means of the knife alone, he is allowing enthusiasm to control discretion. Nor should the prosthesis insist that the prosthetic should always be resorted to. In fact a number of cases which I have seen indicate that where the oral surgeon leaves off the prosthesis should begin, because in the greatest number of cases the surgical operation is but a beginning, not the end of the agent of restoration.

In the first instance we must remember the true functions of the hard palate, the soft palate and the uvula, since disregard of their purposes must naturally lead to failure, but it is most important that we understand the physiological function of the uvula or velum. Careful and scientific students of physiology have told us that the uvula acts as a valve between the oral cavity and the nasal cavity, and that it is not essential as a curtain or vibrator, as has been thought. General surgeons of late not infrequently amputate por-

tions of the uvula, when it is too pendulous and drags on the tongue, making deglutition uncomfortable and speech indistinct. Hence the old idea that the uvula is never over-developed or too long does not prevail among general surgeons. It has been advocated in the past that the uvula is an important element in the production of sound because of its vibratory qualities. Its cardinal virtue lies, however, in its ability to close the faucal opening of the nose. The fact is its function is essentially that of a valve and in proportion as it is a perfect gate between the oral cavity and nasal cavity, it is efficient as an element of articulation. Consequently it is not primal to hang or be as a pendulum of flesh.

It is not the purpose of this paper to discuss the cause of cleft palate other than to say that I prefer to attribute it to three rather than two sources, namely, congenital, accidental and acquired.

The method of taking an impression is of considerable importance, and this I will also demonstrate. It will afford me great pleasure to show the Case method for taking impressions. Dr. Case of Chicago has given this subject considerable thought and has contributed some very valuable suggestions. His appliances are also a pronounced advance over what the profession has been employing.

The Case method is a most decided step in the right direction; it certainly deserves commendation. The Case obturator has thick, round and heavy edges and is thin in the center, and is really opposite in construction to the Kingsley obturator, which is thicker in the center than at the edge. Dr. Case constructs two cases usually—the first being made of velum rubber, and when the patient becomes accustomed to the appliance he makes a new case of hard and velum rubber, the latter being used in the center as a diaphragm.

The disadvantage of the Kingsley method with its thin velum rubber edges is apparent. The soft rubber readily disintegrates, and, being porous, absorbs moisture and oral fluids, and this makes it uncleanly and in a measure uncongenial to the oval tissues.

The Case method could be improved, as I suggested while discussing this subject before the recent meeting of the Illinois Dental Society—if he would line the obturator with gold—or, better still, make the entire case of cast aluminum. I have had a case and cast an appliance and attached the anchors as I suggest and will exhibit same at clinic. By the method I suggest the case is firmly held in

position and the patient need not fear swallowing same, and this assurance is a comfort indeed.

The method I pursue is to swage a thin piece of gold to fit both sides of the cleft, and then take an impression with these in place, then remove and place on the plaster model and solder a thin piece of gold, connecting the two metallic margins. Carefully fit and adjust the metal to the posterior faucal walls and be sure to bend the distal margin so as not to impinge or cut the surrounding muscles. Then solder a wire of clasp metal, from the lateral sides of the obturator and extend them to gold crowns placed on both sides of the upper jaw, and by ratchet principle anchor the simple device into position.

No doubt some of you wish to know how I swage the two lateral pieces of gold so they will accurately hug the free margins of the fissure. This gave me considerable trouble until I by mere chance broke a model, severing it in a line with the fissure or cleft. After breaking the model as described, make a mold in sand of the free border of the cleft and make a die and counter die; then take 22-karat gold of about 30-gauge and swage to perfectly fit the margin of the left half of the model, and then swage a piece of gold in like fashion to cover the margin of the right half. Now place these lateral pieces of gold in their respective models and bring the models together into their original positions, as indicated by the fracture. You now have a piece of gold covering the left side of cleft and a piece of gold covering the right side of the cleft. The next step is to get a pattern in either tea-chest lead or sheet wax and obtain the outlines of the diaphragm or gold connecting the lateral pieces of gold. Cut gold to this pattern and solder it into position, remembering to let the diaphragm extend distally to the faucal walls and instead of cutting the gold off where it impinges, simply bend it upon itself, and the rounded border will be all the more congenial to the muscular tissues.

Do not have the gold border bent into an abrupt crescent, as this would form a shelf for food to lodge.

If these points are observed you can produce a most simple hygienic and serviceable obturator. I regret that the term obturator does not really express the mechanical appliance used in the restoration of cleft of palate. We use many terms and think they mean what we intend, but when we trace the word to its origin we find we are employing words and expecting them to convey certain ideas,

when in truth they do not express the thought intended. This is the case with the word obturator. This word means "to permanently close up, by artificial means, an opening which serves as a canal." Now our appliance is not supposed to close up the opening permanently, since such a device would be an injury rather than a benefit. Our device closes the opening only during deglutition and while certain oral sounds are produced, while during the process of breathing and speaking words of a nasal sound the obturator does not close the opening. We need new terms—words which will express our ideas clearly. When we can dispatch thought and know that its meaning has perfect reception we shall have arrived at a most praiseworthy epoch in the career of our profession. There are but few who fully appreciate the importance of professional terminology.

Let me direct you to have the metal which serves as the diaphragm bent in such a manner that the free margins are in the oral and not in the nasal cavity. If you bend them upward the nasal mucus and fluid substances would lodge and necessitate frequent removal of the case.

In the event of mere perforation of the palate and the opening is not larger than a nickel, excellent results can be gotten by swaging a piece of 22-karat, 24-gauge gold, soldering in the center a thick gold bolt; drill hole in the gold case and attach a gold post on its nasal surface and force a rubber wheel, such as we use in cleaning teeth, through the wound or aperture. The rubber will distend and hold the gold base in position.

There are numerous other methods, but many of them are not practical or hygienic.

The methods which require a spring have the disadvantage of harboring foods and should not be employed.

Some time since an eastern dentist advocated that the obturator be made of metal and that a metallic vula be made and attached to the base by means of a hinge, but even this device becomes freighted with oral fluids and foods which shortly become disorganized by fermentation and induce disagreeable odors.

Others have advocated the use of a spiral spring, attaching same to the distal border of the obturator, and at its free end soldering a piece of gold—paddle shaped—to complement the faucal orifice, but this method, though it seems scientific and correct, shares in the same

objections already cited. The spring and the hinge as well should not be used. There is no need of the hinge or spring; they are useless and do not accomplish the results desired. The hinge with its appending piece of gold representing the velum, hangs in the mouth and obstructs the tongue and does not move readily to close the nasal cavity. The gold is too heavy and when constructed thin and light it fails to be of sufficient rigidity to withstand the action of the food while being forced into the esophagus. In fact, the artificial uvula need not hang—as a curtain. Its function, as I have emphasized, must be to act as a door between the nose and mouth. To further prove that the velum is not so all-important as a sound producer or vibrator, I am pleased to say in a recent conversation with Dr. D. A. K. Steele, oral surgeon of the dental department of the University of Illinois, he stated that he frequently snips away portions of the uvula when it seems to interfere with the action of the tongue. In fact, Dr. Steele added that nose and throat specialists quite often remove considerable of the uvula without injuring the power or quality of the voice.

Now with these facts as a basis it would seem good practice to disregard the construction of the curtain or velum.

There is a possibility that an obturator constructed with a flexible velum made of clasp metal or so attached as to admit of ready antiposterior movements would be a serviceable appliance. I have one under way, but am at this time unable to give you the character of its action, since I am in search of a metal or combination metal which will yield as velum rubber, and this would avoid the use of rubber and dispense with the hinge or spring.

What I desire to impress you with is the thought that the uvula is not the all-important feature in sound modification or production, but it is essential as a door. This statement may seem out of accord with what we have been taught. I know I am standing on dangerous ground, but we often learn when we go away from old and beaten paths, and recent surgical procedures indicate the velum is of secondary importance as a vibrator and sound producer.

The correction of cleft palate by the surgical method is oft unsuccessful in that the operation does not result in producing a perfect valve. It does yield a flap or pendulous velum, but, as before stated, this is of less importance than to be a true door between the nose and mouth.

It is impossible to surgically produce the fleshy portion so it will articulate or come in apposition with the distal portion of the faucal walls. Nature in healing a cleft or V-shaped opening proceeds to deposit granulations at the narrowest part of the wound and continues to heal until the wound has healed straight across at its most distal edge, margin or border, hence we cannot grow or develop a true uvula, nor is it practicable or possible to engraft a velum at the distal margin of the soft palate.

This goes to emphasize the remark that when the surgeon's work has ended the prothesist's labors should begin, the one procedure being to the other as the string to the bow—mutually essential.

Again, since it is not imperative that the artifice be pendulous or be suspended, it is all the more certain that the final steps should be left to the prothesist.

In the past appliances were of a most intricate character and only the ingenious were able to afford the patients service, but late years have established new ideas founded on scientific observation.

We are disposed to think the restoration of cleft or perforation of the palate less difficult than was supposed. The question now remains: How to retain the appliance rather than methods of restoration?

The profession has been especially non-progressive along this line because the general practitioner has believed the cases too difficult and intricate to handle and hence do not treat the case. A few—a very few—a very few—have given the matter serious thought and made progress, while the profession as a whole avoided accepting the unfortunate patients. And when the practitioner did take interest in the case he recommended that he consult with some specialist. The result is the profession has neglected a most necessary element in true advancement—namely, study the case yourself and never send a patron from your office unless you positively feel incapacitated. I am safe when I say only very few give any consideration to restoration of disturbed palates. Recently while attending a large gathering of dentists I asked how many possessed flasks intended for vulcanizing artificial vela, and one gentleman answered, "I bought one years ago, but never used it." How can we expect great advancement in this particular unless the practitioners generally apply themselves and by this universal concern gather notes, observations and freely compare. Ours is a profession founded on art and science, and the former is an outgrowth of comparative methods. To advise, correct and amend

that is what we are gathered in convention for and all must contribute if we hope to be a broad and liberal calling, not narrowed down to a few fads or special departures, but awake to the great needs of the suffering human race.

Ask yourself the query: "Are the afflicted and unfortunate receiving their quota of professional attention? What is being done for the thousands of persons who have impaired or disturbed palate and uvula?" There is scarcely a village in our land that does not count in its population individuals of this character. Our noble profession is not granting these afflicted souls the consideration that our humanitarian spirit prompts. Let us resolve to show our compassion and professional sympathy for these unfortunate neighbors and build for ourselves a character meriting the good will and admiration of the general and not the special public.

**TO KEEP A TOOTH FROM HEATING WHILE FINISHING A
GOLD FILLING OR CUTTING DOWN A GOLD INLAY.**

To prevent the pain produced while cutting down a filling, due to the heat, drop a little cold water on the tooth while cutting. This will keep the tooth and stone perfectly cool, permitting the operator to finish a filling without waiting at intervals for the filling to cool. It also removes the physical discomfort of the patient.

DR. HARRIS.

EUROPEAN PROGRESS

CONDUCTED BY THOS. L. LARSENEUR, D. D. S.

PRACTICAL METHOD OF REPAIR FOR BRIDGES.

BY DR. RENE MANTEAU, PARIS, FRANCE.

(*Bulletin du Syndicat des Chirurgiens Dentistes de France*, Paris, Dec., 1910.)

We are all sometimes placed in a very embarrassing position when a patient comes to us with a bridge having a broken facing. In two different cases I have had opportunity to use with success two different methods of bridge repair, which are given here below.

The first case was that of a bridge which I had made a few months previous. The bridge was composed of a platinum crown on the second molar, of a dummy, with a porcelain facing for the first molar, of a platinum crown on the second bicuspid and of a porcelain facing for the first bicuspid. It was the facing of the first molar which was missing and had to be repaired. In such a case it would have been rather difficult to replace the facing without removing the bridge when it came to me for repair, so the following method was followed:



Fig. I.

I took an impression of the bridge, and made a backing with two holes corresponding to the pins of the fractured facing and fitted it to the backing of the broken facing, then another backing was adjusted and fitted to the part of the fractured porcelain which was free from the original backing and rested on the gums. On this backing a suitable post was soldered in proper position to receive a tube tooth.

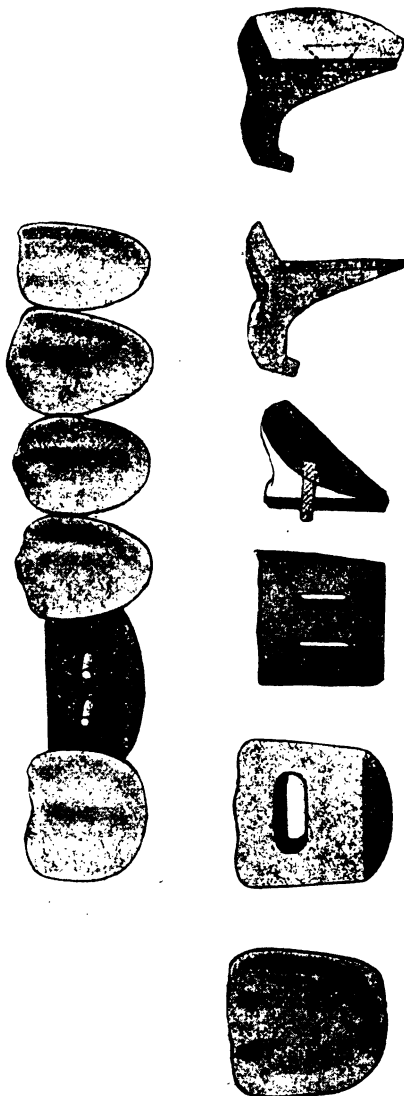


Fig. II.

The tooth had previously been selected and ground to set in proper alignment with the others taking care not to weaken it too much. Small grooves had also been ground opposite the pins of the broken facing in order to allow the tooth to rest in proper position.

The so constructed backing was then placed in position of the bridge and the pins in the fractured facing were firmly tightened and slightly ground to remove surplus of their protruding surface, and the tube tooth was then cemented in position.

The cuts will fully describe this method.

Shortly after this experience, I had to repair another bridge having a fractured molar. This bridge was composed of a gold crown on the second molar, a porcelain dummy, an open-face crown and a soldered facing. The patient requested me to replace the broken facing by a gold dummy, as this could not be seen and she thought it would be much stronger and durable. This suggestion led me to use the following method:

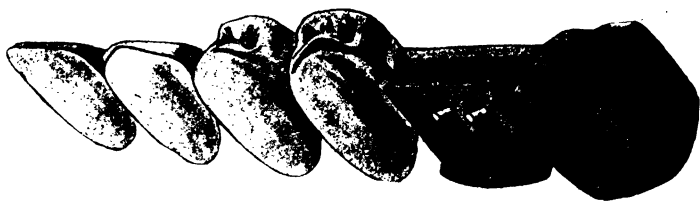


Fig. III.

An Ash bridge repair tooth was used (tooth without pins). An impression was taken and I proceeded to fit the Ash tooth, grinding it so as to have a space between the old backing and the porcelain facing, then a backing was fitted to the Ash tooth, making two oval holes corresponding with the two pins of the broken facing which I had bent over in order to have them fit in the cavity of the Ash tooth. In order to facilitate this adaptation I had previously placed in the impression two pins in the same place and position as the pins of the fractured facing.

Between the backing of the broken tooth and the backing of the Ash tooth there was a space which I filled with wax, and articulated the tooth in position. I allowed some of the wax to pass back of the bridge in order to have a shoulder; I also allowed

it to come over the free edge of the tooth in order to protect the porcelain. The wax impression was then removed and invested and cast in the usual way. This gold block was then placed in position and it fitted perfectly. It was then removed, dried and the whole firmly secured in position with cement.

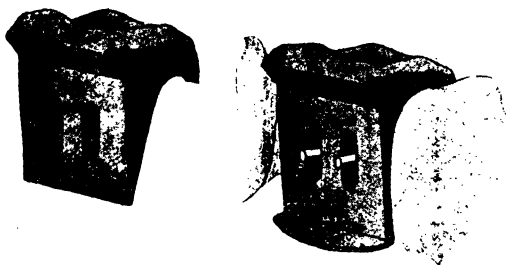


Fig. IV.

These two methods are very simple and may be applied in all cases.

**THE EVOLUTION OF MEN'S TEETH FOUNDED UPON A
STUDY OF THE DEVELOPMENT OF THE TEETH
OF THE AUSTRALIAN ABORIGINAL.**

BY W. RAMSEY SMITH, D. SC., M. B., C. M., F. R. S. E.

Permanent Head of the Department of Public Health of South
Australia.

(*The British Journal of Dental Science*, London, Oct. 16th, 1910.)

At the present time there are two main theories regarding the phylogemetic origin of the heterodont dentition of man and mammals generally. Both theories agree in assuming that all varieties of mammalian teeth have been involved from the primitive simple conical form of tooth. They differ, however, as to the method of evolution.

The first of the fusion-of-cones or aggregation theory. It is stated thus by A. H. Thompson in Kirk's *American Text-Book of Operative Dentistry*, p. 17: "All tooth forms are evolved by modification from a simple cone, which is the primitive form. The teeth

of fishes and reptiles are but simple cones, and those of higher mammals are modifications of the single cone or combinations of two or more cones fused together. Thus in man the incisors are formed of a single cone, the truncated apex of which is compressed to form the wide cutting edge. The canine or cuspid is a single cone, the apex of which is compressed into a trihedral point or pointel pyramid. The bicuspid is composed of two cones fused together, the forms of the cones being quite distinct the entire length of the tooth, as in the upper bicuspid. The typical upper molar is formed by the addition of the third cone to the bicuspid form, as plainly noticed in the roots and the three primitive cusps. The usual quadricuspid form is made by the addition of a cingule. The lower molar consists of four cones which may be plainly distinguished by an analysis of its elements. Each cone in the structure of a tooth is surmounted by a cusp or tubercle. Extra cusps above the number of primary cones are but cingules or undeveloped cusps. In the genesis of tooth-forms, therefore, the complex teeth, as the bicuspid and molars, are formed by the repetition and addition of cones and their accompanying cusps, both laterally and longitudinally, of the jaw."

It is said elsewhere that the evidence offered in support of this view is mainly embryological (*Quain's Anatomy*, vol. iii., pt. 4., p. 29).

According to this theory, which is advocated by Kükenthal and Rose, it is supposed that a shortening of the jaw has given rise to a crowding together of two or more cones, followed by their fusion in order to form bicuspid, milk molars and molars. Another supposition, according to this theory, is that such complex teeth might arise, not from anteroposterior fusion of cones, but from lateral fusion, and fused cones in this case belonging to different dentitions such as milk and permanent. Tomes rejects the theory of lateral fusion, but allows the possibility of the antero-posterior fusion of two teeth of the same series. One case of Virchow's in which three peg-like denticles took the place of a molar, has been regarded as a reversion, and is quoted as affording some evidence in favor of the theory of the origin of molars by fusion of cones.

Tomes criticises the theory adversely from the palæontological point of view. Osborn objects to it on the ground that the origin and addition of new cusps to long-settled perpetuated forms cannot

be attributed to the appearance of a long-lost cone in order to form the new cusp, and that therefore cusps must have some other mode of origin than from cones.

The second theory is the cusp-addition theory advocated by Cope and Osborn chiefly on palaeontological evidence.

According to this view, cusps originated from the cingulum, which may be regarded as a sort of "mother cusp." Tomes says: "Speaking generally, it may be said that new cusps are added to the number already existing by the cingulum becoming elevated into points; it is not very unusual to see subsidiary cusps obviously originating in this way upon human molars."

The "tritubercular" theory is a modification of the fusion of cones theory.

When writing on the subject of the teeth some time ago, I said that some abnormal teeth I had been describing supported the cusp-accretion theory, whilst another tooth seemed to yield strong support to the fusion of cones theory. Since that time I have studied a number of teeth of Australian aborigines in various stages of their formation, and the conditions presented have proved very striking and very novel. For an animal with heterodont, diphyodont dentition, man is not very highly specialised in jaws and teeth; and since the Australian aborigine is generally regarded as probably the nearest to primitive man, one naturally expects that some light may be thrown on the phylogenesis of mammalian teeth by a study of the ontogenesis of the teeth in individuals of the human race.

It will be well to begin by describing some of the teeth of one young subject seen in the photograph selected with the view of showing various stages in development.

No. 1 is a second bicuspid consisting of a saucer-like piece of dentine surmounted by enamel and showing little, if any constriction. No. 2 is an upper first bicuspid showing a slight ridge between two shallow pits. No. 3 is an upper molar consisting of a cup-shaped mass of dentine. The root region shows a slight constriction. Internally the part of the dentinal cup adjacent to the enamel shows two shallow pits with a slight ridge between them. No. 4 is another upper molar showing a more advanced stage. Here one constriction has cut off a portion that will become a root, from two other portions which are separated from each other by another constriction. Internally the dentine of the neck shows shallow pits and

slight ridges. No. 5 is an upper right milk molar, and shows constrictions that have proceeded so far as to mark off the general form of a molar tooth. A long line marks the apposition of two edges which have not yet united sufficiently to make a complete division of the vascular and nerve elements of two of the roots. No. 6 is another right upper milk molar, and shows a further stage in which the slits for the vascular and nerve elements are still shorter. No. 7 is a lower right milk molar, and may be regarded as the final stage in the evolution of an ordinary molar, and corresponds with the finished product.

I have examined a good many other specimens of teeth and jaws of infants and youths, and in all instances the same general features are exhibited.

The incisors and canines show some particularities similar to those mentioned in connection with the molars. One feature is the great size of the pulp cavity in the large hollow teeth up to a late stage in the development of the teeth. The result of this is that the jaws, specially the lower jaw, are excavated to such an extent that one wonders that fractures do not often occur through the very slim trabeculae between the tooth-sockets; probably, however, the hollow developing teeth are so firmly packed as to make the jaw in which they are imbedded and the teeth themselves one resisting mass.



Under aspect of various developing teeth

Another point to be noted is that portions of the jaw bone immediately underlying the teeth become moulded to form the root sockets at the same time as the constrictions appear in the primal tooth tube or cone.

One matter, when considered in connection with this subject of single cone origin, possesses a good deal of interest. Edward John Eyre says, regarding Australian aboriginals in vol. ii., p. 206 of his

Journal, 1845: "The lips are rather thick, and the teeth generally very perfect and beautiful, though the dental arrangement is sometimes singular, as no difference exists in many cases between the incisor and canine teeth." Mr. John D. Woods, in *The Native Tribes of South Australia*, 1870, p. xxxvii., says: "The teeth are beautifully regular, but the incisors are not sharp, like those of the European, but flat, and not unlike molars." To those who know little about the teeth of aboriginals these statements may appear ridiculous; to those who have paid close attention to the subject they appeal as being accurate. When one examines the worn-down teeth very commonly met with in blacks from some localities, one notices the flattened incisors, devoid of enamel tips, very like bicuspid and molars, and showing the same peculiarities. They remind one of the "gouty" teeth of the white subject. The similarity of the incisors to canines is even better marked, and is often seen.

It appears that when teeth begin to retrograde they revert in the individual to something corresponding with what may be supposed to be the primitive conical form worn down to form a peg. At any rate they show a strong tendency to become like one another. I am sure it would puzzle many dentists and anatomists to classify some Australian teeth as incisors, canines or bicuspid. This change appears to be closely associated with the monotony of diet that exists in some localities.

The subject of change in form of the teeth naturally leads one to refer to Tomes' criticism of Cope's theory, in which Tomes assumes the unalterableness of the dentine once it is formed (*A Manual of Dental Anatomy*, 1904, p. 368).

No one who has had an opportunity of examining many aboriginal teeth of the sort I have referred to can conclude that dentine, when once formed, is unalterable. The evidence is that it is alterable at all stages. This fact is further shown in what is called "dislocation" of the teeth. In this condition the lingual root of the molar retains its position in the alveolus, while the buccal roots change, in a very considerable degree, the angle they make with the lingual root; and this occurs by moulding without any absorption of the dentine of any of the roots. Accretion or hypertrophy of the dentine, if it occurred, would obviously decrease the angle.

This mutability or "malleability" is of great importance in connection with this question of evolution of heterodont forms. I have observed that the enamel cap in the unworn teeth of aborigines forms a covering of very uniform thickness over the crown of dentine which, when denuded of its covering, closely resembles the external enamel surface itself in outline and configuration. The dentine, at the limit where it is in contact with the enamel, would appear to be "sensitive," "reacting," or "responsive" to pressure, and to meet requirements by becoming cuspid. The dentine is really the plastic or malleable material in the formation of roots and cusps alike, the enamel being merely a layer of more or less uniform thickness closely investing the crown with its tubercles or cusps, like a non-sensitive epithelial or epidermic coating.

It has to be noted in connection with the appearance of cusps of the Anoplotherium, one of the most primitive of all mammals, show a gradual transition from incisors to molars with a corresponding complexity of cusps; so that cuspidation appears to be a very early phenomenon in the mammalian class. One infers that if this condition was not inherited by the mammals it was very early and very easily acquired by them. Further, it does not appear that the jaws of the Anoplotherium were so much "foreshortened" as would compel a "cuspidation" of the teeth by compulsory antero-posterior fusion of primitive Sauropsidan or Ichthyopsidan cones.

One important fact to be learned from the specimens I have examined is that the compound form of the tooth, due to the formation of the roots by plication or constriction, does not appear until direct pressure has been exerted on the tooth. Teeth that have not erupted show no such formation. This has an important bearing on the subject of the simplicity of premolars as compared with milk molars and permanent molars. In some other races as well as Australian aborigines, as is seen well marked in some skulls I have described from New Caledonia, the milk molars are extremely large and molar-like, and are a good deal worn on the grinding surface. They had for a time been doing all the grinding and crushing work of molars in such a position at the part of the jaw nearest to the fulcrum as allowed them to act with the greatest effect. As the jaw extended backwards, the permanent molars appeared and took up, in succession and in addition, the work previously done by

the milk molars, the roots developing as the pressure began to tell upon these teeth. When the bicuspid was developed, the same forces were not at work to form or to mould their roots as in the case of their predecessors, since the function of grinding and crushing had been assumed by the molars. The succession in time of molars and bicuspid bears this out in a remarkable manner. At the seventh year there are two milk molars and a permanent molar for grinding or crushing purposes, and this condition continues till the tenth year, when the first molar gives place to the first bicuspid. This leaves only two grinders (*viz.*, the second milk molar and the first permanent molar) till about the thirteenth year, when the second permanent molar may have come and the second milk molar may have gone. Two grinding teeth at any one time would seem to be sufficient functionally, at least in the higher races.

This subject of root formation or moulding has to be co-ordinated with the physical facts regarding the strength of a tube and the resistance to pressure of the parts underneath and surrounding it. A hollow tube of a certain diameter and thickness is the strongest structure possible with a given amount of material at disposal. Further, a constricted tube gives additional strength while the roots distribute the pressure to the bony parts of the jaws. The upper jaw, being softer and more spongy, has usually a larger number of roots implanted in it.

What light do these specimens and observations cast on the evolution of man's teeth? They show that cuspidate teeth, like canines and incisors, are developed from a simple tube or dentine tipped or topped by enamel. They show also that this development takes place by constriction. What is the explanation of the tubular form which the specimens present? Is this tube the original cone from which such teeth are supposed to be developed? If not, does it represent a stage of evolution later than the supposed stage of fusion of several cones? Surely it were a work of supererogation for two, three or four primitive cones, either in the individual or the race, to go through a stage of fusion, then by absorption of their adjacent septa to become hollowed out into a single simple cylinder or cone or tube such as is presented by the specimens, only to become finally reconstricted to form milk molars, bicuspid, or molars as the case may be. It seems to me that there neither is nor has been

any such fusion or absorption, but that the complicated milk molars, premolars, and molars are formed by plication or constriction of an original primitive single simple cone or tube according to the method demonstrated by these specimens.

It is not too much to claim that the whole theory of the origin of "heterodont" teeth from fused primitive cones, as well as the theory of aggregation of cusps insofar as it involves the origin of roots, will have to be considered in the light of these and similar specimens from Australian aboriginal subjects. Further, some exceptional abnormalities of fusion of teeth may be best explained in accordance with this mode of development from one primal tube.

JOURNALISTIC GEMS.

HOW INFECTION AFFECTS THE BODY.

BY STEPHEN SMITH, M. D., LL. D.

How infection affects the body was the supreme mystery that the scientists of the past strove in vain to penetrate. By no devices of their laboratories could they detect the agents that caused an epidemic. There was only one satisfactory explanation of the origin and spread of the devastating plagues which seemed to fall from the heavens on the people, and that was that epidemics were "a visitation of God" on account of the sins of the people. Of course the only preventive and curative measure available and effectual was repentance, prayer and humiliation."

It is a cause of devout thankfulness that while these things were hid from the "wise and prudent" of former times, they have in these latter days been revealed unto "babes." No event in human history would have more greatly taxed the credulity of the most learned and experienced physician of half a century ago than the prophecy that in the early years of the twentieth century school children would be taught by simple and easily understood object lessons how to prevent and how to cure consumption, the Asiatic cholera, yellow fever, and other epidemics that have devastated cities, destroyed armies, and swept from the earth whole tribes of primitive people.

But that prophecy has been literally fulfilled. During the last summer there has been a traveling object lesson that visited the different sections of the state of New York and taught the people, especially the children, all of the essential facts as to the nature of the infection of tuberculosis, its effects on the body, and the methods of prevention and cure.

As infective diseases cause the vast majority of cases of severe and crippling affections and of deaths in every community, the value of a knowledge of the nature of infection and how it affects the body, by the people of all ranks, ages and conditions, cannot be estimated in its influence on the future of the human race. Already we learn that within the period referred to the sickness and death rates of communities where the people have been most thoroughly instructed as to

the nature of infective diseases and how they affect the body, have greatly diminished, and the average of human life has been markedly lengthened. Indeed, it now seems possible to restore the patriarchal age when a man may live to be "an hundred and twenty years old. . . . his eye . . . not dim, nor his natural force abated."

To understand how infection affects the body involves an inquiry as to the nature of infection, its mode of entrance into the body, and its operations on its organs and tissues. The terms "infection" and "contagion" are often used as synonymous; but a strict definition according to the medical significance of each limits the former to "the transmission of disease by actual contact of the diseased part with a healthy absorbent or abraded surface," and the latter to "transmission through the atmosphere by floating germs." But in the final analysis the cause of disease in both infection and contagion is so similar in its action that the medical profession has adopted the term "communicable disease" in all cases where the disease is communicated from one person to another by means of a germ, whatever may be its method of attack on the body.

WHAT THE GERM IS.

What is this communicable germ or agent? A bacterium—a little stick, staff—so called from the rodlike shape it assumes in the process of growth. The individual bacterium (plural, bacteria) is an organism representing a low form of vegetable life; resembles mold; in size the smallest living thing that can be seen with the microscope; in masses forms the films floating on foul fluids or covering decomposing animal or vegetable matter. It consists of a single cell, and its mode of increase when placed under proper conditions for growth is by division of the cell body; the two cells formed out of the first being divided into four before complete separation has taken place; the four dividing into eight, the eight into sixteen, the sixteen into thirty-two, and so on indefinitely. Now, as it requires only thirty minutes for one cell to divide, it has been estimated that a single bacterium will in twenty-four hours increase to the number of over sixteen million five hundred thousand, and in forty-eight hours to two hundred and eighty-one million five hundred thousand. At this rate of increase, in three days there would be a mass of bacteria weighing about sixteen million pounds. As the multiplication of bacteria depends upon conditions that soon interfere with or interrupt their

growth, as the want of food, their own secretions, and certain natural forces operating against them, these stupendous figures are useful only as an illustration of the enormous fertility of these organisms, and their destructive energy when they attack a susceptible living body.

What is the function of bacteria in the economy of nature? It would be surprising if such a menace to human life as some species of bacteria have proved themselves to be had no other place among the forces of nature than to prevent the too rapid increase of the human race on this earth, as our forefathers believed. It is gratifying, and quite satisfying to a revengeful spirit, to learn from the modern laboratory that the special and only function of the bacterium is to perform the duties of a universal scavenger. It is always seeking decomposing animal and vegetable matter. It lives on filth, riots in it, and dies when deprived of it. It enters the human body only in search of filth, and if it finds none it does the person no harm, and dies either from the want of food or by starvation, or escapes from the body, or secretes itself where it may safely await the creation of decomposing matter, when it will begin its lifework.

Thus there may be and doubtless is at all times a great variety of bacteria of a virulent type quiescent in our bodies only for the time that they find no decaying matter adapted to their special tastes or wants.

It is a most interesting fact, therefore, that this most deadly foe of man becomes dangerous only when the latter is harboring in his body waste or decomposing matters that are slowly poisoning him. It is in the process of digesting this material that the bacterium excretes poisons—toxins—of the most virulent nature, which are absorbed into the blood of the human victim, creating the condition popularly known as blood poisoning.

Bacteria perform a most important function in the economy of nature; viz., the conversion of decaying and dead matter into food for plants. Biologists assert that without bacteria plant life on the earth would be scanty or entirely wanting; they are the natural intermediaries between plants and animals in point of food production. They are therefore called scavengers, because they live on decomposing matter; but in the very act of digesting such waste they convert it into products essential to plant life (carbon dioxide and ammonia) and by their excretions restore to vegetation its chief supply of food.

Viewed in the light of the past history of infectious diseases, this is not an overdrawn picture. If we estimate the deaths from smallpox in ancient times, from cholera in modern times, and from tuberculosis (consumption) throughout all time, the destruction of human life by bacteria cannot be overstated. The bacterium has been a wickedly implacable foe to the human race in the past. Invisible, intangible, everywhere present, it has proved omnipotent in its destructive attacks upon communities.

But our century opens with a far brighter outlook for the race. Elementary forces which, through ignorance of their true functions in the economy and conservatism of nature, were permitted in the past to expend their energy in the destruction of life, have been revealed by science to be man's most helpful agents in the promotion of comfort, health, and longevity. Electricity was for ages only a thunder-bolt, an object of terror and an agent of destruction, visiting the human residence only to kill its owner and burn the structure.

Today the same natural force is man's most obedient and humble servant, quietly visiting his home to furnish him heat and light, annihilating time in the transactions of business, and transporting him from place to place as on the lightning's wings.

So the bacterium, once the terror of mankind as the invisible and apparently unknowable cause of devastating pestilences, proves to be the useful purveyor of the by-products of its digestion of waste matter which is thereby converted into food for plants. It visits man in the pursuit of its humble calling to obtain his contribution to the sum total of plant food. It searches every tissue, every organ, every recess, however obscure, but so stealthily that its coming and going and its immediate presence are not known if absolute cleanliness of the body exists. It is only when dying tissues or organs, or accumulations of dead matter, are found that its presence becomes known. Even then it would prove harmless and its presence would be unrecognized if its excretions of plant food (toxins) were not necessarily absorbed and did not enter the circulation, thus poisoning the body it is relieving of dead matter.

MAN'S DEFENSES.

Briefly, what are man's defenses against bacteria?

Chiefly two, viz., first, killing it by depriving it of food; and, second, killing it directly by what are known as germicides.

The first method is effected by cleanliness of the person. It may be affirmed that cleanliness, without and within, absolutely protects every man, woman and child from the most common disease-producing bacteria. It is not sufficient to keep the skin clean by daily baths, while the mouth, nose, throat and other internal surfaces and organs are covered or filled with effete matter. We must be every whit clean if we would escape the results of the scavenging processes of bacteria of some variety or species.

That condition can be secured and maintained in an organism that itself is constantly decaying in all of its tissues and organs only by strict compliance with the natural laws governing the operations of the body as an independent organism in which all of its forces tend to promote its health and conservation. Every tissue and every organ has its special means of renewal of its tissue by the removal of dead particles through the outlets and the reception of fresh material through the inlets of the body. Waste and supply are exactly balanced, as in the most precise and delicate machine. If the outlets become clogged so that all the waste cannot escape at the proper time, dead matter, the food of bacteria, begins to accumulate, and disease must be the result.

In the same manner, if the food is in excess of the demands, or of a quality not suited to the needs of the tissue or organ, waste begins to accumulate, bacteria swarm in the decomposing mass, and emit their toxins, which, absorbed into the circulation, cause a variety of physical disturbances according to the species of bacteria present, and the particular tissues the toxins affect, as the nervous system, stomach, heart, kidneys, etc.

That even the most feeble minded may be able to regulate their habits so as to secure an adequate supply of food both in quality and quantity, and the prompt removal of waste matter, so as to secure that degree of cleanliness of internal organs essential to escape from bacterial attacks, the mechanism of the body is endowed with instincts that make it automatic in its action. Such are appetite and taste for food and drinks; the desire for exercise, rest and sleep; the impulse of the organs in an active state, etc. It is only when these natural monitors are interfered with that the mechanism begins to fail in its elimination of waste, and bacteria find the conditions favorable for their functional activity.

DESTROY THE BACTERIA.

The second defensive measure is the destruction of the bacteria by means of agents that will destroy the microorganism before or after its entrance into the body, but without injuring the healthy tissues. There is a great variety of these agents of more or less power, and they are used in the form of gases, liquids and powders, according to conditions existing in individual cases. In general, it may be advised that, as bacteria are everywhere, germicides ought to be used far more extensively than they are for the purposes of securing not only the direct destruction of bacteria, but of removing or neutralizing dead matter, the food of bacteria. So minute are bacteria, and so adherent are they to material things, that mere bathing with water does not remove them, medicate it as we may with fancy soaps. There should be used in addition a more penetrating and destructive agent, which would not only destroy all forms of bacteria, but at the same time secure absolute cleanliness.

A DAY AT THE DENTIST'S.

I went to the dentist's to have a tooth filled,
 He sorted his tools with an ardor that thrilled.
 He opened my mouth, 'till I heard my jaw crack
 And bored a large hole down the small of my back.
 He bored out my skull and he bored out my jaw;
 He put in a tunnel in search of a flaw.
 He put in a blast and he put in a sump;
 He mined and projected with clatter and thump.
 He drilled into fragments my aching backbone
 And hoisted it out, never heeding my groan.
 He worked at the hole 'till it grew to a cave,
 A chasm, a canyon. With eagerness grave
 He said, "Now I'll fill it." And mixed up with care
 Some acid and pepper and mortar and hair.
 He cooled off my mouth with tobasco and then
 He filled up that pit with the strength of ten men.
 He pounded and prodded; he beat and he tamped;
 He mauled and he hammered; he slugged and he stamped,
 Till the hole he had dug to the roots of my feet
 Was filled with a carload of solid concrete.
 "It is finished," he said as he rose from my knees
 And got down from my collarbone. "Two dollars please."
 Which I paid with a will as I put on my lid,
 For I don't think 'twas much for the work that he did.

The following from the Chicago American of recent date will be of interest to dentists, as it illustrates what will take place in dentistry if indifference is shown as to proper qualification of graduates and disregard of location is lost sight of. It might be of concern to the dental profession to ask what is a proper population ration as rated with number of practitioners.

Of course, it all depends on the education of the masses and the condition of the teeth of the people. But let us hear from the readers.—Editor.

DOCTORS WORK HARDEST FOR LOW PAY.

Does the practice of medicine in Chicago pay?

Is the profession of a physician one into which the young man may enter with the reasonable expectation of becoming independent before old age comes?

Opinions vary considerably as to the proper answers.

To the plain citizen the term "physician" or "doctor" designates a person in the possession of a fair share of the goods of this world. It means to all the people a man who is in no hurry for his money and who can be paid after everything else has been settled.

FACTS ABOUT PHYSICIANS.

Here are a few facts about the profession which may serve to show that things are not always what they seem:

Physicians practicing in Chicago.....	4,323
Physicians members of the Chicago Physicians' Society.....	1,837
Physicians having automobiles	193
Physicians having carriages	1,137
Physicians having business or home telephones.....	2,080

The telephone is a most necessary part of the equipment of a physician, but the figures go to show that more than half the doctors in Chicago cannot afford that necessity.

The physicians of Chicago are perhaps the hardest worked men and women in the city and the poorest paid among the professions.

The average medical man in Cook County earns no more than \$1,200 a year, and part of that is never paid.

FEW RECEIVE BIG FEES.

Of the 4,000 doctors in Chicago scarcely more than 100 are in receipt of incomes from their profession of more than \$20,000 per annum.

Many are wealthy men, but they have made their money outside their profession. Not 500 exceed the \$10,000 mark, and the remaining 2,500 run from that figure down to \$5 per week, the price of bare existence.

"It is not that the field is overcrowded," said a prominent physician, one of the \$20,000 class. "There is plenty of work, but the quacks are about the only ones who get the cash. A good physician is, nine times out of ten, a bad business man, while a bad physician or a straight quack is nearly always a good business man so far as the collection of a fee goes.

DOCTOR'S ADVICE—"STAY AWAY."

"Would I advise a young man or woman to take up the practice of medicine in Chicago? I would not. It takes time and study to get the degree, and after that is all over there is a wait of years before more than a bare living can be made.

"Take the wealthy doctors right here in Chicago, and I will venture to say that few, if any of them, made their money out of their profession. Take myself for instance. I have made money in medicine, but that is nothing to what I have made on the Stock Exchange.

"I know some young men with splendid training and marked ability who are practically starving to death."

The doctors affiliated with the Chicago Physicians' Society are a unit in stating that the "advertising physician," a creation of the last few years, has done much to lower the standard of the profession.

800 WOMEN DOCTORS.

Women physicians, a species rare a generation ago, now play a prominent part in healing the sick in Chicago. There are 800 women qualified to practice, and taken as a class they are more successful than their male competitors.

They are, however, subject to the same trials and tribulations as their confreres, and one of them told how hard it is to get a fair price for the work done.

"Last week," she said, "I was called upon no less than three occasions by a woman I was treating. She stated on all calls that she was unable to come to the office, but told me her symptoms, and I advised her as to treatment and called up a druggist to order a prescription. I sent in my bill yesterday and today it came back with a refusal to pay for the telephone consultations.

"Then there are the people who make friends with you after they have been your patients, and then become insulted when asked to pay for advice given in their homes or in the office; and there are the emergency cases which cost money and never return a cent.

"Taken all in all, it appears that physicians in Chicago are called upon to do more for nothing than any other profession."

**SELECTION OF FILLING MATERIALS AND METHODS OF
INSERTING THEM WHEN TEMPORARY WORK
NEED NOT BE CONSIDERED.***

BY C. N. JOHNSON, M.A., L.D.S., D.D.S., CHICAGO, ILL.

There never was a period in the history of the profession when it seemed so difficult to properly place some of the materials in use for filling teeth as it does at the present time, nor to say definitely just what method or material shall be used in each given case. Some of the methods in use today and which promise very substantial results are, as a matter of fact, only in their evolutionary stage, and no man can predict with certainty just what their ultimate status will be. The suggestions presented for your consideration tonight are not offered with the idea of solving the question for all time or, in fact, for any appreciable time, but merely to point out what seem to your essayist the significant factors governing the most approved practice of the day.

It is understood from the title of the paper that temporary filling materials are not to be considered which eliminates from the discussion such materials as oxy-phosphate of zinc and gutta percha, and places on the doubtful list the silicate cements. There seems to be much confusion in the minds of the profession regarding the precise status of the latter material, some operators reporting nothing but disastrous results from its use, while others claim a very encouraging measure of success. This emphatic disapproval on the one hand and equally emphatic endorsement on the other may in a measure be accounted for in the fact that when it is a failure it is a most dismal failure, and when it does succeed it seems to furnish one of the most ideal filling materials we have ever had for certain classes of cavities exposed to view and not subjected to severe stress. Of one thing we may rest assured, that it cannot be successfully built out into contours to restore the incisal or occlusal angles of teeth as a regular rule of practice. Its tendency to splinter off under stress is too pronounced to permit the conservative operator to depend on it for this class of work. There also seems with most of these cements to be a determined persistency to shrink and this, of course, leads to leakage around fillings which ultimately ends in failure. Added to this is the serious dis-

*Read before the annual meeting of the Chicago-Odontographic Society, January 28, 1910.

coloration which we occasionally see occurring in the most unaccountable manner, and we have a series of limitations which make careful men pause before using this material extensively. On the other hand, we have a reverse picture. Some fillings appear after several years' service to be in good condition, with no apparent shrinkage, no discoloration and no solution of their surfaces which can be detected. The margins seem perfect and the blending with the enamel surface is such as to make a filling which is less conspicuous even than a porcelain inlay. Such results as these give a certain measure of basis for the enthusiasm which some operators have developed in favor of this material, and yet, as has been just said, when failure does come it is so disastrous as to temper the highest enthusiasm.

What causes this apparent discrepancy in the behavior of the silicate cements I am not prepared to say. Some operators unhesitatingly state that it is all due to the manipulation, but if this is true it must be admitted that this material is so exacting in its demands that it constitutes a very serious limitation to its usefulness as a material with which to save teeth, because we find failures occurring in the hands of the most conscientious operators. A series of careful experiments should be made with this material by some of our investigators to see if more light cannot be shed on its physical characteristics and thus give us a better basis upon which to judge of its usefulness and the most approved methods of manipulating it.

With the silicate cements still placed in the balance we come to a consideration of those materials about which more is definitely known. For saving the anterior teeth we are given three methods, each of which has its advantages under certain indications. We can use the ordinary gold foil fillings, the porcelain inlay, or the gold inlay. This at once brings up a discussion of the relative value of foil fillings and inlays—a subject which has occupied the attention of the profession quite extensively for several years. It is not necessary to go deeply into this discussion on the present occasion, but I should like to ask your forbearance while I reiterate a statement I have frequently made and the truth of which impresses me more and more as I study the subject. With all the beautiful results which we are today securing with inlay work, results which we fondly hope and confidently believe will prove sufficiently permanent to justify us in continuing this kind of practice, we should not forget the fact that there has been no method or material yet introduced which for absolute reliability in tooth sav-

ing properties can be compared with a perfectly adapted, perfectly condensed, perfectly contoured, and perfectly finished gold foil filling. And I also believe that whenever this fact is lost sight of in the conduct of a practice there is something tangible lost which militates against the greatest ultimate benefit to the patient. To gain the closest apposition of gold to the dentine and enamel walls of a cavity is to seal that cavity more securely and permanently against leakage than is possible with any other material at our command. Much has been written about the disadvantages of gold in contact with cavity walls, but this is true only of those rare cases of extreme hypersensibility and in deep cavities which come near to involving the pulp. Gold, then, must still remain the most reliable of all filling materials wherever a perfect technique may be secured in its use—but just here comes in the rub, and it must be acknowledged to be a rather severe and compelling rub. To get a perfect technique with gold in many of the cases which come to us the operator must sacrifice more of himself and his patient than seems justifiable in the highly wrought nervous organisms of the present day. Even if the dentist were willing to sacrifice himself on the altar of the highest ideals and greatest perfection of results he would still have his patient's attitude to reckon with, and this attitude is something that cannot be wholly ignored. It is true that the dentist should take a firm stand against dictation on the part of the patient when the point at issue is one which seriously affects the future welfare of the patient, and yet when patients quite generally take the stand that they will no longer submit to having large gold foil fillings inserted when inlays can be used instead, it must, in a large measure, influence any observant operator. To stand out against a sentiment so widespread and pronounced as this is growing to be is to alienate many excellent patients and confine one's efforts to a few, which is surely not in the line of doing the greatest good to the greatest number. Then there is another consideration in this connection, the necessity of a perfect technique with gold in order to secure a good result, and the difficulty of obtaining this in very many of the cases which we are called upon to treat. People are becoming more and more intolerant of long sittings, and while improved methods of technique have materially shortened the time necessary to insert a gold filling, yet it is at least much longer in large restorations than to have an inlay inserted. If we induce a patient

against his will to sit for a large gold filling he becomes restless and more or less impatient, and this seriously interferes with a good technique. Then there are many cavities so located and muscles of the mouth so constituted that even with a willing patient it is difficult to perfectly insert foil, which naturally results in work not up to the highest standard; and if it is true that gold, when properly inserted, is the most reliable of all filling materials, it is equally true that an imperfect gold filling is one of the most disappointing.

There can be no question that a well inserted inlay is greatly preferable to a poorly inserted filling, and in those cases where a good technique can be obtained with an inlay and not with a filling the former should be used in every instance. And in this connection it may be stated that today many operators are accomplishing better results for their patients by the inlay method than they ever did by gold filling, due to either one of two things—that their natural technical tendencies fit better into the manipulation of the inlay than of the foil filling, or that they were never able to sufficiently control their patients to get a good technique with gold.

But let us consider more specifically what we deem the most suitable filling material for the different classes of cavities. In incisors the question of esthetics enters more and more as a vital factor for consideration in deciding the selection of a filling material. Patients are becoming more sensitive about having any evidence of operations on the teeth apparent to the public gaze, and this is only in line with a higher cultural development of our civilization. We should therefore co-operate with our patients to the fullest legitimate extent in this direction, though we should never jeopardize the usefulness of a tooth by placing in it something less substantial than gold unless the gold is offensively conspicuous. Porcelain inlays seem to have waned appreciably in professional esteem, and there is a danger that in the swinging of the pendulum some of their virtues may be ignored. In all exposed cavities in anterior teeth in patients of high esthetic sensibilities porcelain will be much less conspicuous than gold and should therefore be used. But it is always at the sacrifice of stability and permanence that it is substituted for gold, and this should never be ignored in its selection. One reason why the profession is apparently turning a cold shoulder on porcelain is because of the unsatisfactory condition of the margins of many porcelain inlays after a few years of service. This relates not only to a chipping of the porcelain at the

margin, but to a discoloration of the line between the inlay and the enamel. In many mouths we find a tendency to this discoloration, no matter how fine the line may be between the inlay and tooth, and this with a painstaking and discriminating operator proves a source of embarrassment even when the patient makes no complaint regarding it. In fact, in some instances this discolored line develops so slowly that the patient is less impressed by it than is the dentist, and yet in observing the condition of many porcelain inlays after a few years the frequency of this dark line has quite a natural tendency to influence an operator against using them. But with all of this, porcelain, if well inserted, is less conspicuous than gold, and the lesson should be to take the greatest pains with porcelain and secure the most perfect technique. It may not be possible with the best technique to always obtain satisfactory results, but the better the technique the farther removed from those glaring defects which have brought discredit upon this method.

Cavities with large labial exposures, whether proximal, incisal, or gingival, in individuals who show their teeth extensively and who are esthetic in their tastes should be filled with porcelain, but all other cavities in incisors should be filled with gold. It should always be borne in mind that the margins of gold fillings are more satisfactory than are those of porcelain inlays, and that gold is more reliable in saving teeth, so it should be used in every instance where esthetic conditions do not predominate. There are many instances where the incisors are not exposed to view to the gum line even when the patient laughs, and in these cases cavities occurring in the gingival third of the labial surfaces should be filled with gold. In a very careful study of the behavior of gold and porcelain in these cavities in the labial surfaces, I have been so impressed with the better condition of the gold over the porcelain after a few years' service that I am impelled to strongly urge the more general use of gold where it is not too noticeable. In the case of men who wear a moustache it is frequently possible to employ gold in nearly all cavities without making it conspicuous.

As to the decision between gold inlays and fillings where gold is to be used in incisors it is once more a question of technique. If the patient can be properly controlled so as to permit of a perfect operation, gold foil can usually be employed to better advantage than a gold inlay and with more certain results, but in some instances

the difficulties of securing a good technique with foil are so great that a better result can be obtained with an inlay. In a general way the larger the cavity the greater the leaning toward an inlay, while the smaller the cavity the more the argument is for a filling. As has already been stated, the insertion of very large foil fillings is not readily tolerated by the average patient of the day, and so far as the writer's experience has gone to attempt to insert very small inlays, whether of porcelain or gold, is exceedingly unsatisfactory. That method should be employed which promises the most permanent results irrespective of previous opinions or prejudices, and each case should therefore be studied separately and be considered as a law unto itself. This is necessary to avoid the too common tendency to fall into ruts and to practice in a routine way from day to day.

Cavities occurring in the molars or bicuspid should be filled with either gold foil, gold inlays, or amalgam. Porcelain has no place in these teeth unless it is in rare instances in exposed positions in bicuspid. It has gone down too often in fracture and defeat when exposed to the stress of mastication to longer permit of argument on its behalf in these positions. In line with the statement just made as to the undesirability of small inlays, all pit and fissure cavities should be filled with foil unless the tissue has become involved so far beyond the fissures as to make a large and complicated operation. With many of the pit cavities the attempt to insert inlays as some operators are doing, seems to the essayist extremely ill-advised. To properly prepare these cavities for inlays involves much more cutting than for fillings, and the aggregate time consumed in the operation is all in favor of the filling. Added to this is the incontrovertible fact that the finished product is more perfect in these cases with the filling than the inlay, and it leaves no argument in favor of the inlay, except the untenable one of an undue predilection on the part of the operator in favor of inlay work.

The debatable ground seems to your essayist to be encountered when we approach cavities involving both the proximal and occlusal surfaces, and here there is no disguising the fact that the pointing of the finger-board is in the direction of inlay work. The problem of gaining a good technique with gold foil in these cases is a different one from that of the small pit cavities, and the operation is more severe on the patient. When you increase the tension on the patient you at once develop a restlessness which interferes with good work,

and in every case where the operator can secure a good technique with inlay work and not with foil he will serve his patient better with the inlay. This does not alter the fundamental fact before stated, that a perfect gold filling is more reliable than an inlay. With the best inlay there is always the cement to be reckoned with, and this is not always reliable or uniform in its behavior. Inlays sometimes loosen and fall out in most unaccountable ways, even when apparently well inserted and by the very best inlay workers, though it may be confidently predicted that the percentage of such failures will grow less as the principles of inlay work are better understood and the quality of our cements is improved.

There is one condition sometimes met with in these complex cavities in which decay has extended very much wider bucco-lingually in the gingival region than it has near the occlusal surface, and in which there is little undermining of the tissue toward the occlusal. To cut such a tooth away sufficiently to receive an inlay is little short of vandalism, and the resultant weakening of the tooth from an operation of this kind can never be compensated for by any of the advantages of inlay work. It may be argued that in many of these cases the extent of the cavity, particularly where there has been some recession of the gum and much extension of the decay rootwise, introduces the factor of a difficult and nerve-trying operation with gold foil. This is true, and there are frequently cases where the condition practically precludes the use of foil. It is in such cavities that amalgam has its widest and most legitimate field of usefulness.

It is unhesitatingly stated at this time that amalgam can be made more serviceable in these extensive cases than either foil or inlays—more serviceable than foil because a better technique can be gained with it, and more serviceable than an inlay because it leaves the tooth stronger. If the cavity is properly prepared for amalgam, a good alloy is used, the filling well condensed and built into a proper contour, and then subsequently carefully polished, it is an operation which will save many badly decayed teeth and do it with little nervous tension on the patient. But the simple fact must be faced that very few operators will give it this attention. We may moralize about the necessity of doing this and the lack of conscientiousness in the operator who does not do it, but we cannot change the fact. It is a condition and not a theory we are facing. There seems to be something inherent in the character of the amalgam which does not draw out the artistic or

esthetic in an operator, and, try as we may, there are many of us who simply cannot put the enthusiasm into our amalgam work that we can into gold or porcelain. As a personal point of view, your essayist wishes to state at this time that while he has felt obliged to use much amalgam through financial consideration for his patients, and while he has tried to do conscientious work with it and has saved very many teeth which he believes otherwise would have been lost, yet he frankly admits that he has never found it possible to develop any degree of enthusiasm for the material, and has never been able to perform an operation with it which brought to him the inspiring glow of satisfaction which has frequently rewarded him at the completion of a gold filling, or a gold or porcelain inlay. He has often taken himself seriously to task for this apparent defect in his make-up as an operator, and yet experience would seem to prove that there are very many others in the profession who are influenced as he is by amalgam. This may be accounted for in part by the fact that an amalgam filling cannot be properly completed and polished at one sitting. The operator cannot obtain solidity and resistance to the filling at the time of inserting it. He must dismiss his patient with the feeling that it is more or less insecure till it has crystallized, so much so that he usually instructs the patient not to masticate on it for a few hours. When the patient returns for another sitting some of the interest in that particular operation is gone and the operator approaches the difficult procedure of polishing the filling without the consecutive enthusiasm which is developed by the insertion of a gold filling or an inlay. The rhythm of the operation is gone, and the polishing is seldom so satisfactorily done—if indeed it is done at all—as it would be if it had been possible at the time the filling was inserted. With a gold filling or an inlay the final touch can be given it at the same sitting it is inserted, and the patient dismissed with a sense of accomplishment and completeness.

The amalgam filling then can never appeal to an operator of high artistic and esthetic sense, and must remain as it has in the past, a useful rather than an inspiring material! That it is useful can never be denied, and yet since the advent of the cast gold inlay there are fewer indications for its use. Aside from the class of cavities just referred to—those in which gold foil would be too difficult or exhausting and gold inlays impracticable—there is only one other consideration to justify its use, and that is a financial one. Amalgam

has proved and will continue to prove a serviceable material with which to save teeth for those who cannot, or who think they cannot, afford the more costly methods; and yet it should be the function of the dentist to educate people to the idea that the best is none too good for their personal preservation and that there has never yet been devised any material which is quite good enough to go into a human tooth.

For cavities occurring in the gingival third of the buccal surfaces of molars the gold inlay offers the best solution of the problem. The location renders it difficult to do perfect work with foil, and if there is any place in which amalgam has proved unsatisfactory it is here. The slightest tendency to shrink on the part of the material draws the filling away from the mesial and distal extremities of the cavity and starts a leak which ultimately leads to failure.

The title of this paper includes the methods of inserting the various filling materials under consideration, but the length of time consumed, whether judiciously or otherwise, in dealing with their selection prohibits any reference to this phase of the subject. Much of a practical nature might be given at this time, particularly with reference to simplified methods of inserting gold foil, and to the most efficient technique in gold inlays. It seems to the writer that the majority of members of the profession are not living up to their highest possibilities or taking advantage of the best there is in the various materials presented for our use. The blind following of any one method to the exclusion of all others is not conducive to a symmetrical development of the dentist himself as far as his professional ability is concerned, nor to the best interest of the patients whom he is called upon to serve. And yet this much must be said—and it is the key to the entire question—that it is as much the skill of the operator or his peculiar ability to manipulate certain materials as it is the material itself which counts for or against success. With any of the materials extensively in use today it is possible for a capable and conscientious operator to do work which will prove of great service to the patient, while with a careless and unskillful man no material can be relied upon to give satisfaction.

It is as much, then, a matter of manipulation as it is of material, and this fact should urge us on to the achievement of a more perfect technique in the use of any material which appeals to us. But it

should never narrow us to one material, because the virtues of all the materials at our command are none too great to successfully meet the various cases which comes to us.

IODIN AS AN ASTRINGENT, ANTISEPTIC, DISINFECTANT AND GERMICIDE IN MOUTH DISEASES.

EUGENE S. TALBOT, M. D., D. D. S., CHICAGO.

For an astringent, antiseptic, disinfectant and germicide in the mouth, there is nothing so convenient and quick acting as tincture of iodine. I have used this drug as an astringent, antiseptic and disinfectant since 1878, but did not know of its germicidal properties until six years later, although I was obtaining the desired results of germ destruction.

Patients present themselves with fetor of the breath, pus about the teeth, inflamed gums, diseased alveolar processes, acid, mucous and saliva, the latter being also ropy and stringy plaques on the teeth and decay with all the forms of bacteria from the most harmless to the more dangerous pathogenic micro-organisms such as the pneumococcus, diphtheria bacillus, tubercle bacillus and the germs of children's diseases. Miller has demonstrated more than fifty varieties of micro-organisms in the mouth. Pus germs are often present in and about the necks of the teeth and easily infect wounds and inflamed tissue. These germs are also taken into the stomach at every swallow and some pass through into the intestines. While most of the better class of patients possess fairly cleanly gums, yet from 12 to 20 per cent of all patients have pus germs in the oral cavity.

Tooth decay is due to lactic-acid ferment and nearly every person has it to a greater or less extent. Clinic and dispensary patients, and especially the poorer classes who never use brushes, washes or powders in the mouth, possess regular cesspools of filth. Before the finger, even, are placed in such mouths, the mucous membrane, gums and teeth should be thoroughly painted—completely covered—with tincture of iodine. Enough iodine should be applied to run in between the gums and the teeth, and then it should be allowed to dry; afterward the mouth should be rinsed with water.

Attention was first called to this method of procedure by my researches on interstitial gingivitis. The pathology of this disease

showed the inflammation to be deep-seated throughout the alveolar process. In order to reach this inflammation, iodine alone would penetrate the bone.

All people after the temporary teeth erupt have interstitial gingivitis more or less throughout life. The mouth of every patient of mine, therefore, who has any operation on the mouth or teeth, since I began this method, is treated to an iodine bath before or after the operation. This may occur every day, every other day or whenever the patient has an appointment.

The official tincture of iodine contains 7 per cent of iodine dissolved in alcohol to which is added 5 per cent of potassium iodide. This preparation, if used often will cause the mucous membrane to become tender and sore; it will also, in some patients, destroy the mucous surface. To overcome this difficulty, many years ago, I formulated the following, which I have called iodoglycerole:

Zinc iodide	15 parts
Water	10 parts
Iodine	25 parts
Glycerin	50 parts

The proportions were suggested by Prof. C. S. N. Hallberg of the University of Illinois School of Pharmacy, in order to obtain a clear preparation without deposits. As compared with the ordinary tincture of iodine, its astringent properties are greatly increased, the glycerin causes rapid absorption and the irritating effects are reduced to a minimum. The penetrating effect is remarkable. The glycerin thickens the preparation and prevents it from mixing with the saliva and running over the mouth as the ordinary tincture will do. Long, round, wood applicators can be obtained at the drug and instrument houses and on one end cotton is wound; this is saturated with the preparation and the gum margins above and below are painted. The jaws are closed, the lips and cheeks distended and the application made as before, the teeth are also covered; the lips and cheeks are held away from the jaws until the iodine has dried.

No one drug will destroy lactic-acid bacilli and their ferment and thus stop tooth decay like iodine. Frequent applications will destroy all germs in the mouth and reduce mouth and general disease to a minimum.

Before operations on the mouth and fauces, the gums, teeth and mucous membrane should be given an application of iodine; especially

in the removal of tonsils. After this treatment, and after the iodine has become absorbed, the tonsil or part to be operated on should receive similar treatment. This application should be made from 10 to 15 minutes before operation.

To prevent contagions and infections among public school children, their teeth, gums, and mucous membrane should be painted with iodoglycerole as often as once a month, during the school term. This method will greatly reduce tooth decay.—*A. M. A. Journal*.

IMPACTED LOWER THIRD MOLARS.

BY A. BROM ALLAN, D. D. S., CHICAGO.

The object of this paper is to give a more clear and concise idea of the difficulties with which one comes in contact in the removal of impacted lower third molars, according to the angle in which they lie toward the lower second molar, the contact with the same, and the depth of the tooth in the mandible.

Many operators do not understand the seriousness of this operation and the great damage that can be done in an attempt to remove such teeth without any preparation on the part of the operator by removing the bone by drilling around the tooth, thereby releasing it in every possible manner before an attempt is made to extract it.

Even after great precaution has been taken, you will find that on account of the density of the bone at the angle of the mandible and the broadening out at the external oblique line to the lower second molar, the removal of the tooth is very hard, even after the removal of the bone by drillings, so that you can pass a probe almost to the apex of the third molar to be extracted.

It is a great question, in my mind, why there are not more fractured jaws than there are, when an operator will use a Physick's forceps or an elevator on impacted lower third molars and force the tooth directly against the angle of the mandible and into the socket, instead of lifting away and out of it. Yet there are men here now, no doubt, who have tried this method and learned by experience that such a procedure is not to be repeated with success or safety, without a possibility of a fracture or a lifted second molar, unless Providence be with such cases. However, I feel the best thing one can do is to exclude the Physick's forceps from your practice, as the leverage that

comes from the use of it is far greater than the operator realizes, and is bound some time to get him into trouble. My reason for this is, that the distal cusps of the second molar are pronounced and when the fulcrum is brought to bear on them, you may destroy them. The elevator, as an instrument, is in the same class, although the fulcrum is at the gingival line of the tooth and not so liable to destroy the tooth used as a leverage. Great care should be taken as to the force applied, even with this instrument.

Impacted third molars are, as a rule, sent to the oral surgeon or the extraction specialist, and the dentist in so doing does not fully realize the operative technique necessary to remove them. Then when the fee question comes up, the dentist not being informed on the difficulty of removal, sides with his patient, instead of explaining that all teeth and conditions are not the same. Such cases as impacted third molars are serious surgical operations, and not simple extractions. Let the same case of impaction be operated upon by a physician, and his fee would make the dentist's look small. In addition to that would be a hospital and nurse's bill.

A man who removes a great many impacted third molars asked me why I did not send my cases to a hospital, as I then could charge a good fee, whereas if it were done at the office the patient could not help feeling that it was not worth as much. Yet when I give them the benefit of such a reduction, by not placing them in a hospital, why should they not pay for such an operation with a good fee? Only because it is dentistry, which the dentist himself has helped to cheapen by not standing up and demanding what his work is worth and by allowing the patient to dictate what he should require for his services and how to do his work.

The leading specialist in New York City does not attempt impacted third molars for less than \$50 to \$100, knowing the difficulty of their removal. Yet the dentist is willing to throw the responsibility on to some other operator and allow him to take the risk and consequences, but seems unwilling that he should charge an adequate fee. That is a great mistake, as every good fee in dentistry helps all dentists to get more and at the same time uplifts the profession.

Before operating I have always made it a point to suggest an approximating fee to avoid a misunderstanding later, and also explain that as soon as the tissue is disturbed that far back in the mouth, even with the best care and treatment, there will be swelling of the

glands and the jaws will open but little, because of the inflammation. Daily treatment of the socket must not be neglected for at least two weeks. How often the jaws are set and glands swollen from unerupted third molars, continuing for weeks, the patient never consulting a dentist, yet after the removal of an impacted third molar and just the same conditions arise, too many times the patient is willing to blame the operator for the same inflamed condition. I received a letter from a dentist in Indiana, in which he stated for eight weeks or more a patient had been unable to open the jaws. I advised him, if it were possible, to get a skiagraph and see if there were not an unerupted third molar. So you must expect this inflammation after an operation of an impacted third molar, although it varies as to conditions.

Patients understand much better after the removal why there is an expense attached to such cases, and also the inflamed and sore mouth, which they have on account of the disturbed tissue. Therefore they realize it is not a simple matter to remove one. I have mentioned at other times that it is far more difficult to remove an impacted lower third molar than to remove tonsils and adenoids, or any number of operations on soft tissues, for which the physician receives a good fee, far in advance of that asked by the dental profession. So let us all try to improve some of these conditions and not let the other fellow walk off with the laurels.

METHODS.

When the patient comes to me for my services, I immediately have a skiagraph made of the case, as this is most important and too many times neglected. I cannot bring too great stress on this procedure, as now it is within the reach of most all of us. Dr. Lewis and others of our city do nothing else but skiagraphic work. It takes but twenty-four hours to get a print, and a bromide can be obtained at once. When you have this skiagraph to look at you are not guessing as to the position, length or root formation, but are able to proceed with more intelligence and accuracy. Although there are some positions of the teeth where only a distorted skiagraph can be taken, yet it enables you to have a better idea of how to proceed with the operation. By all means resort to the skiagraph to help you in your work. Don't forget this warning. Do it from now on.

The method used in the removal of impacted third molars, thanks to Dr. C. Edmund Kells, Jr., of New Orleans, is to place the patient

under nitrous oxide gas, then with a No. 8 or No. 9 bur, following the free margin of the gum, release the tissue around the tooth by drilling the process buccally and distally, until you have a groove around the tooth in the mandible. Then on the recovery of the patient you have the gum tissue released from the bone, and can insert the bur under the margin of the gum tissue and continue to drill with far less inconvenience to the patient while conscious than a tooth cavity preparation. However, the bur should be inserted under the free margin of the gum before the dental engine is started, as the blades of the bur will pick up the tissue and cause pain. If the blades of the bur fill, the shank of the bur heats up and, coming in contact with the tissue, causes pain, as well as when you touch the tissue which has not been severed from the bone at any point surrounding the tooth. Great care should be taken to prevent this conditions from existing. During the drilling, while the patient is conscious, I insert the probe often to see the depth the bur has cut, and then satisfied that the tooth has been well released around it and well toward the apex, I proceed to give the patient nitrous oxid gas; the second time, I use a lower alveolar forceps to remove the tooth, as I then can get a lateral motion as well as the lifting of the tooth up and backward from the socket, taking it out in the way of the least resistance.

When I was with the late Dr. Slonaker, his method was to take a bistuory or scissors and cut the tissue away back of the tooth up the angle of the mandible, then pare the tissue away. This would mean more laceration and the patient would have a much harder time of it, from the inflammation caused by so doing, than when the bur is used. Unless the tooth is deeply imbedded, there should be very little laceration of the tissue, and consequently the socket will heal up more quickly and the patient be more comfortable and not require so many treatments, which means a saving in the fees to them. I find that by using the Beck method of bismuth paste in the socket I keep it clean and aseptic and at the same time the tissue will fill in from the bottom of the socket more quickly than if it were packed with gauze, as there is not so much pressure brought on the tissue. If the opening be large I use the paste with paraffin in it and place a small piece of cotton over it to keep it in place and prevent it being washed out. It is absolutely necessary to treat the socket once every twenty-four hours until it has filled in enough so there is no place for food or saliva to lodge. I wash the socket thoroughly with an antiseptic solution and

then fill it with the paste. I continue this treatment until the patient is able to cleanse is by rinsing with a mouth wash. Then I feel no further treatments are necessary.—*Dental Review*.

THE USE OF TRICHLORACETIC ACID.

BY J. W. HALSELL, D. D. S., DALLAS, TEXAS.

Trichloracetic acid is prepared by the oxidation of chloral hydrate by means of nitric acid.

It consists of colorless, rhombic, deliquescent crystals.

It belongs to a group of three acids, the other two being the monochloracetic and dichloracetic acids, and the difference in their composition is due to the proportions of chlorin they contain.

They have similar properties. Trichloracetic acid is employed in dental practice as an escharotic in the treatment of pyorrhea alveolaris, on account of its destructive effect on pus secreting surfaces of the alveoli of teeth, for which purpose a ten per cent solution is usually applied, or in an aggravated case it is preferable to use a deliquescent crystal itself.

It is also employed for the removal of a polypi of the pulp and hypertrophy of the margins of the gums and epulis.

Dr. Kirk speaks of using this acid in its deliquescent state for the removal of such growths.

Trichloracetic acid has also a solvent effect on calculi upon roots of teeth of which from a ten to a twenty-five per cent solution in water may be used.

In the treating of gums overhanging lower wisdom teeth, where the issue has been greatly swollen, making mastication almost impossible, two or three applications all around under the gum and back of the wisdom tooth gives the most pleasing results by acting as an astringent antiseptic, escharotic and refrigerant.

Trichloracetic acid is also very useful to gain access to roots of abscessed teeth through a fistulous opening by wrapping cotton around a broach and forcing a crystal before it and following the fistula, for after two or three such treatments the fistula quite frequently entirely disappears. Such treatment I often resort to where, for some reason, I do not care to open through the tooth.

A one per cent solution has been successfully employed as a mouth wash for its astringent and stimulating action in inflammations and ulcerations.

In operating in a mouth where there are gastric ulcers, the cauterizing of the ulcer with a crystal of trichloroacetic acid affords great relief. Diluted with water to a three per cent solution, it is an excellent local astringent and stimulant. Dr. Harlan recommends it for removing the overlying gums of third molars, as it destroys the tissue without hemorrhage or subsequent soreness.

After removing of salivary calculus, which collects in such large quantities on lower anterior teeth, causing them to become very loose in their sockets, one application, in most cases, will harden the gums and prevent the accumulation of the calculi for a long period.

It has a peculiar power to soften and remove sanguinary deposits, and it acts without injury to the teeth or soft tissue.

It is most useful in the treatment of receding gums or hypertrophied and spongy, bleeding gums.

In the filling of cavities, where the gums overhang the cavity, making it difficult to prepare on account of the bleeding, apply a little acid and proceed without further trouble.

This is a drug which seems indispensable in my practice and one for which I could not find a substitute.—*The Texas Dental Journal*.

RETAINING APPLIANCES IN ORTHODONTIA.

The retaining appliance is fully as important in orthodontia as the original apparatus for correction—in fact, more important, for the teeth *might* be moved into place with a very indifferent appliance, while the retainer *must* meet certain requirements, else the teeth will move back toward their old positions, and the case end in dismal failure. Every practitioner with any experience in orthodontia knows this to his sorrow. Yet the beginner is likely to estimate the retaining appliance very lightly, and runs a much greater chance of failure through a poor retainer than through a poor regulating appliance. Therefore make the retainer with as much care as a piece of bridge work; make it strong enough; and lastly, leave it on long enough to do some good—at least one year.—*Western Dental Journal*.

EFFECTS OF CHRONIC NASAL OBSTRUCTION DURING CHILDHOOD UPON THE GROWTH OF THE TEETH AND JAWS.

Deformities of both the upper and lower jaws, accompanied by more or less irregularity and crowding of the teeth, are very common among those who have suffered from long-continued nasal obstruction in early life. These changes are, in my experience, more rarely seen or much less marked in children under the age of five years.

The most important causative factor is the lateral compression exercised upon the jaws as the result of the stretching of the cheek muscles consequent upon the mouth being constantly open.

Direct contributory causes depending also upon mouth-breathing are: (1) Lack of sufficient use of the jaws; (2) absence of the spreading action of one jaw upon the other and the molding action of the tongue, and (3) the short upper lip.

Remote contributory causes may, in certain cases, play a part. Some of these are hand-feeding, improper feeding-bottles, sucking of the thumb, rhachitis, the absence of teeth, etc.

Treatment should include (1) the establishment of efficient nose-breathing as early as possible, by the removal of any obstruction, by correction of the habit of mouth-breathing, by chin-straps or other devices for keeping the mouth closed during sleep, and by breathing exercises and physical culture, and (2) early attention to deciduous teeth, both as regards their preservation and manner of eruption, by correcting faults in mastication, and by the carrying out of properly conducted and suitable chewing exercises.—*J. Stoddart Barr, in British Dental Journal.*

SOLDERING PASTE

A solution of waste sheet zinc cuttings in ordinary hydrochloric acid is diluted with an equal quantity of filtered water and ammonia solution added until the deposit is dissolved again. This zinc-chlorid-ammonia solution is mixed with thick starch paste, so that a mass of syrupy consistence is obtained, which can be advantageously used in soldering tin plate, iron or brass.—*Bur.*

If glass tubes are used in saliva ejector, a nice way to keep them clean and bright and also create a good impression on one's patients is to partially immerse them in a 10 per cent solution of hydrochloric acid, contained in a large-mouthed jar with a glass cover.—*Carl M. Cahill, Chicago, Dental Review.*

ANNOUNCEMENTS

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The twenty-ninth annual session of the National Association of Dental Examiners will convene at the Colonial Hotel, Cleveland, Ohio, Monday and Tuesday, July 24th and 25th. Beginning at 10 a. m. Monday three sessions will be held daily until the business of the association is completed.

Members of all state boards, whether members of this association or not, are invited to attend.

705 Venetian Bldg., Chicago, Ill.

T. A. BROADBENT,
Secretary.

SOUTH DAKOTA BOARD OF DENTAL EXAMINERS.

The South Dakota State Board of Dental Examiners will hold its next meeting at Sioux Falls, S. D., Tuesday, July 11th, 1911, at 1:30 P. M., and continuing three days. All applications for examination, together with a fee of twenty-five dollars, must be in the hands of the secretary by July 1st. Applicants who have not complied with the above will not be permitted to take the examination.

For further information, blanks, etc., address Aris L. Revell, Sec., Lead, So. Dak.

EVERYBODY'S CORNER.

Dentists Witness New Operation.—The dentists of Birmingham, Ala., have just witnessed a very unique operation by Dr. E. J. Greenfield of Wichita, Kan., who has the honor of this discovery and method. Where there is no tooth or root in the jaw it consists of putting in the Alveolor process in iridio platinum and gold wire and allowing it to become attached by the process. After 90 days a crown or bridge attachment is made to the gold root.

Bowyer-Baker.—Dr. Scott Bowyer, a prominent dentist of Taylorville, Ill., is to be married in June to Miss Mabel Baker of Urbana, Ohio.

Dental Bridge Clears Mystery of Suicide Involving Two Worlds.—A dental bridge found in a room of a Brooklyn lodging house that had been occupied by a man who committed suicide two years ago has just served to identify the suicide. A dentist in Stockholm, Sweden, to which the bridge was sent by the Swedish Consul in New York, recognized it as a piece of work done for B. E. Collander, son of a wealthy cotton manufacturer of Stockholm. A representative of the Swedish Consulate had the body exhumed and clinched the identification by locating a small scar described by the dentist.

Attempt to Poison Dentist.—Dr. A. M. Winters, a young Dentist of Kansas City, Mo., received a box of candy through the mail and after eating some of it discovered that he had been poisoned. His condition is not serious. He can give no clew as to the sender of the box.

Two Dentists Injured When Vulcanizer Explodes.—A vulcanizing tank exploded in a dental office in Philadelphia, Pa., recently, injuring two dentists, namely Dr. Norman Seifert and Dr. E. F. Maken. The failure of a safety valve to operate is given as the cause of the explosion.

Lund-Briggs.—Dr. Charles D. Lund, a prominent Chicago dentist, and Miss Amy Noel Biggs of New Plymouth, New Zealand, were married May 3d, at Waukegan, Ill. Dr. Lund was prominent also in political affairs and was one of the Democratic candidates for senator at the last election.

Godfrey-Snow.—Dr. Edward Carl Godfrey, a practicing dentist at Stamford, Conn., was married April 18th to Miss B. F. Snow of Dover, N. H.

Dentists Seek Army Appointments.—Several dentists of Portland, Ore., are seeking to become army officers in view of the fact that Congress at its last session passed an appropriation act which provides a dental corps for the army. The new law provides that those who have served for three years under contract may be commissioned as first lieutenants in the dental corps and are eligible to receive permanent commissions.

IN MEMORIAM.

Dr. Edward J. Shannon, a well known dentist of Cincinnati, Ohio, died April 28th. He is survived by a wife and two children.

Dr. Stephen Globensky, a practicing dentist in Montreal, Canada, was stricken with apoplexy on April 20th and died April 22d. He is survived by a widow and two children.

Dr. P. F. Bollinger, a prominent dentist of Dayton, Ohio, died suddenly May 4th. The doctor was 54 years old and is survived by his wife.

Dr. Henry Jerzy, a practicing dentist in Philadelphia, Pa., committed suicide April 25th. He was a sufferer from tuberculosis.

Dr. Edward Blackshaw, one of the oldest practicing dentists in Illinois, died decently at his home in Urbana, Ill. Death was due to heart disease and complications of old age.

Dr. James Grove, a well known dentist of Oak Park, Ill., died April 26th of tetanus caused by stepping on a rusty nail while working in his garden. He was fifty-two years old and is survived by a wife and three children.

Dr. Leah Mills, a well known dentist in Omaha, Neb., ended her life April 18th by inhaling gas.

Dr. R. M. Sanger, a practicing dentist in East Orange, N. J., died of apoplexy April 16th. He was recently elected chairman of the National Dental Faculty Association and also served as president of the New Jersey State Dental Society. The Odontological Association of New York recently made him an honorary member and the Academy of Dentistry of New York bestowed upon him an honorary membership. He is survived by a wife, one son and one daughter.

Dr. Bion A. Moss, a practicing dentist of Milwaukee, Wis., died April 25th. He is survived by a widow and one daughter.

Dr. James A. Priest, a well known dentist of Utica, N. Y., died April 13th. Death was due to pneumonia. He is survived by a wife and two daughters.

Dr. John W. Benson, one of the oldest dentists of Glen Falls, N. Y., died recently. He was 75 years old and is survived by a widow and one son.

Dr. George Hine, a prominent young dentist of Catlin, Ill., died April 16th from pneumonia. The doctor was 26 years old.

Dr. John D. Ballard, a prominent dentist of Orange, N. J., died recently after an illness of several weeks.

Dr. Samuel Budd, one of the leading dentists of Muncie, Ind., died April 6th from pneumonia. He was 81 years old and up to the time of his death practiced dentistry. He is survived by three children.

Wanted**For Sale****Exchange**

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Copy must be on file in our office by the 15th of the preceding month in which insertion is desired.

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FOR SALE—Elgin Casting Appliance, in good condition with gold traps under arms. Price \$15.00 complete. Address "Cast," care American Dental Journal, 39 State street, Chicago, Ill.

WANTED—Clarke double bowl spittoon. It must be in good shape and a good looker. State the least price in your letter. Address L. C. Patterson, Room 10, 1339 Oh. street, Lincoln, Nebr.

FOR SALE—Somnoform outfit complete, new rubber, \$7.50. Address Dr. M. A. Teeling, 1378 E. 55th Street, Chicago, Ill.

FOR SALE—An attractive practice and outfit in good South Dakota town. Change of business and climate desired. Address "C. H.," care S. S. White Dental Mfg. Co., Chicago, Ill.

WANTED—Dental practices. My method of finding buyers is successful. No publicity for you. Write for information. Unlocated dentists write for bargain sale lists. Mention states desired. The Dentists' Middleman, C. M. Cryor, D. D. S., Box M., Franklin Grove, Ill.

FOR SALE—Good practice and outfit, cheap. Selling on account ill health. New growing Montana town, railroad division, no opposition, fees big, 1,500 people, large Ransom and Randolph Inst. Case, late make Archer Chair, instruments, etc., complete, a snap, price \$250.00 cash. Address "Melstone," care American Dental Journal, 39 State Street, Chicago, Ill.

Acute Inflammation

A patient applies for treatment with a jaw so swollen and painful that it is impossible to open the mouth sufficiently to make a proper examination, much less do any operating.

We are constantly receiving reports from dentists who have treated such cases with a thick hot dressing of Antiphlogistine, to find that in twenty-four to forty-eight hours the swelling and pain have so far disappeared as to allow of proper operative procedures.

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